

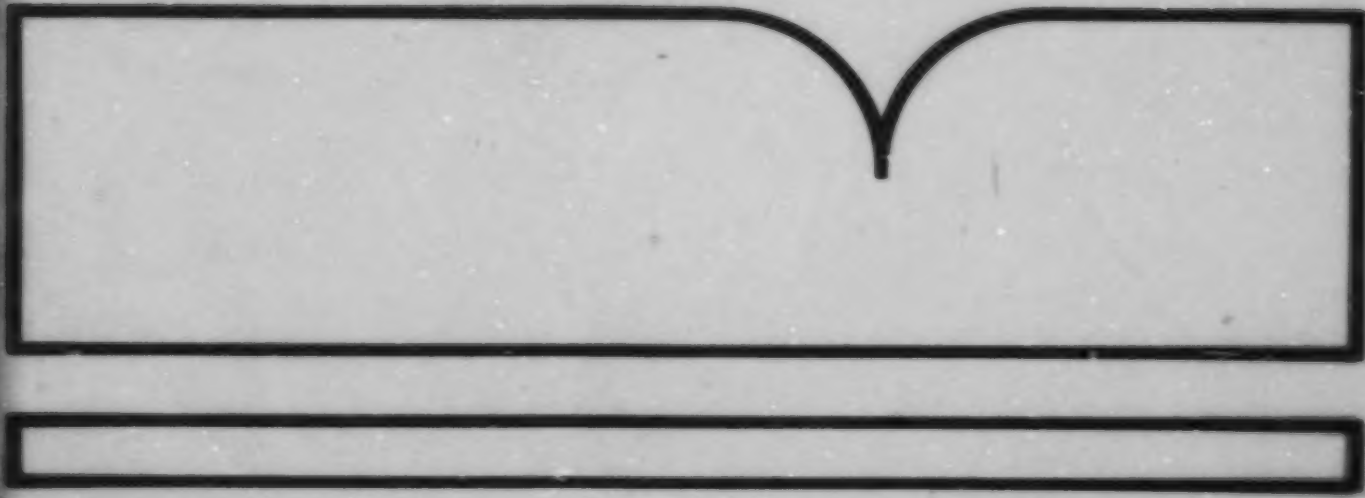
Fail-Safe Devices for the
Prevention of Hazardous
Material Spills

Factory Mutual Research Corp., Norwood, MA

Prepared for

Environmental Protection Agency, Cincinnati, OH
Hazardous Waste Engineering Research Lab.

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FAIL-SAFE DEVICES FOR THE PREVENTION
OF HAZARDOUS MATERIAL SPILLS

by

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Contract No. 68-03-2054

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16. ABSTRACT Hazardous material spills have often been caused by over filling containers. Many spills could be prevented by using automatic containerfilling procedures to determine when maximum capacity is reached. This project conducted an assessment of current technology, including laboratory testing of devices and performance monitoring of on-site automatic level controllers. Three industrial plants cooperated in the field testing phase, each having a different problem with a different material. The types of level control devices chosen were ultrasonic, vibrating tines, and a magneticcoupled float unit. Two of the units were activated by electricity, and the third was pneumatic. One unit controlled dry powder; the second, a viscous liquid; and the third, an aqueous liquid. Each location required an explosion-proof system. All were subjected to the extremes of weather, and all were installed without significant revisions to existing containers. The on-site experience at host plants demonstrated that fail-safe level controllers can work well for an extended period under severe weather conditions. The proper controller configuration must be chosen to be compatible with the environment and with the material being controlled. Controllers should incorporate requisite safeguards to assure safety and be resistant to corrosion, fouling and weather.		
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FOREWORD

The U.S. Environmental Protection Agency was created because of increasing public and government concern about the dangers of pollution to the health and welfare of the American people. Noxious air, foul water, and spoiled land are tragic testimonies to the deterioration of our natural environment. The complexity of that environment and the interplay of its components require a concentrated and integrated attack on the problem.

Research and development is that necessary first step in problem solution; it involves defining the problem, measuring its impact, and searching for solutions. The Municipal Environmental Research Laboratory develops new and improved technology and systems to prevent, treat, and manage wastewater and solid and hazardous waste pollutant discharges from municipal and community sources, to preserve and treat public drinking water supplies, and to minimize the adverse economic, social, health, and aesthetic effects of pollution. This publication is one of the products of that research and provides a most vital communications link between the researcher and the user community.

This report describes the assessment and field testing of automatic level controllers to assure adequate safeguards during container filling procedures. The technology described in this report will be of use to those involved in the prevention of hazardous waste spills. This report will be particularly useful to agencies, companies and individuals involved in the design, specification or retrofitting automatic level controllers where hazardous wastes are handled.

Francis T. Mayo,
Director
Municipal Environmental Research
Laboratory

ABSTRACT

Hazardous material spills have often been caused by over filling containers. Many spills could be prevented by using automatic container-filling procedures to determine when maximum capacity is reached. This project conducted an assessment of current technology, including laboratory testing of devices and performance monitoring of on-site automatic level controllers.

Three industrial plants cooperated in the field testing phase, each having a different problem with a different material. The types of level control devices chosen were ultrasonic, vibrating tines, and a magnetic-coupled float unit. Two of the units were activated by electricity, and the third was pneumatic. One unit controlled dry powder; the second, a viscous liquid; and the third, an aqueous liquid. Each location required an explosion-proof system. All were subjected to the extremes of weather, and all were installed without significant revisions to existing containers.

The on-site experience at host plants demonstrated that fail-safe level controllers can work well for an extended period under severe weather conditions. The proper controller configuration must be chosen to be compatible with the environment and with the material being controlled. Controllers should incorporate requisite safeguards to assure safety and be resistant to corrosion, fouling and weather.

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CONTENTS

Foreword	iii
Abstract	iv
Figures	vi
Acknowledgments.	vii
1. Introduction	1
2. Conclusions	3
3. Recommendations.	6
4. Technical Description of Level Control Devices	7
5. Results and Discussion	20
Overload Control for Outdoor Grease Storage.	20
Fill Control for Dry Powder Silo	24
Explosive Solvent Fill Control	27
Appendices	
A. List of Level Control Devices Available.	A1
B. Instrument and Vendor Information for Controls Evaluated . . .	B1

FIGURES

<u>Number</u>		<u>Page</u>
1	Components of level detector equipment	5
2	Dipstick	12
3	Bubble tube	12
4	Pressurized tank	12
5	Ballcock	14
6	Float.	14
7	Capacitance.	16
8	Conductance.	16
9	Thermal probe.	17
10	Echo (sonic, ultrasonic)	17
11	Vibrating forks or rotating paddle	17
12	Automatic sounding	20
13	Sight glass.	20
14	Light beam	20
15	Radiation.	23
16	Pressure tape.	23
17	10,000 gallon grease tank at J. Lynn Cornwell Company.	25
18	Dry chemical bulk silos at Teknor-Apex Company	26
19	Solvent tank at the "large New England chemical manufacturer".	27
20	Test setup for ultrasonic level detector	29
21	Control cabinet for ultrasonic level detector.	30
22	Ultrasonic level detector transducer on man-hole cover of grease tank	31
23	Vibrating fork level detectors on PVC silo	33
24	Control panel of vibrating fork level detector mounted on skirt of silo	34
25	Mock-up of PVC silo	35
26	Control panel showing pneumatic pressure switches - magnet-coupled floor level detector.	40
27	Magnet-coupled float being checked out	41
28	Guide tube and float in position in solvent tank	42

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Section 1

INTRODUCTION

Hazardous material spills that pollute waterways, groundwater, and the atmosphere constitute a peril to human and environmental health. Prevention of accidental spills is necessary to achieve environmental protection, and to avoid economic losses of millions of dollars worth of industrial materials.

An earlier report, "Hazardous Material Spills: A Documentation and Analysis of Historical Data," (EPA-600/2-78-066), published in April 1978, formulated a prioritized list of hazardous material spill causes that reflected the quantity and hazard potential of the material spilled. This information was used by the U.S. Environmental Protection Agency (EPA) to help establish research priorities for future work in preventing spills. Data obtained in the above work determined the following spill causes (with associated secondary causes), listed in order of priority of future research:

<u>Primary Cause</u>	<u>Associated Secondary Causes</u>
1. Tank overflow	Personnel error, gauge missing or defective, other mechanical defect.
2. Tank rupture or puncture	Loose or leaking cover, valve broken, derailment, collision, and/or overturn.
3. Hose transfer system failure	Hose or coupling failure, personnel error, mechanical failure, material defect.
4. Non-tank rupture or puncture	Body or container failure, sharp object, improper loading.

Tank overflow was given top priority for further study. Most overflow spills were considered preventable, as a large proportion were attributable to human error. The 1978 study showed that nearly half of the tank overflow spills were attributed directly to personnel error and to unknown causes.

Training and supervision can often be improved. In addition, many types of level and volume controls are available. An appropriate and suitable device could virtually eliminate the tank overflow problem, if properly installed and maintained.

As a result of the earlier report (EPA Contract 68-03-0317), Factory

Mutual Research Corporation (FMRC) began work on the present project. Included were (1) the assessment of current technology; (2) the acquisition of three fail-safe level control devices; (3) laboratory testing, modification, check-out and, if required, a demonstration; (4) installation and demonstration under actual use conditions for an extended period of time; (5) a report of the findings.

Section 2

CONCLUSIONS

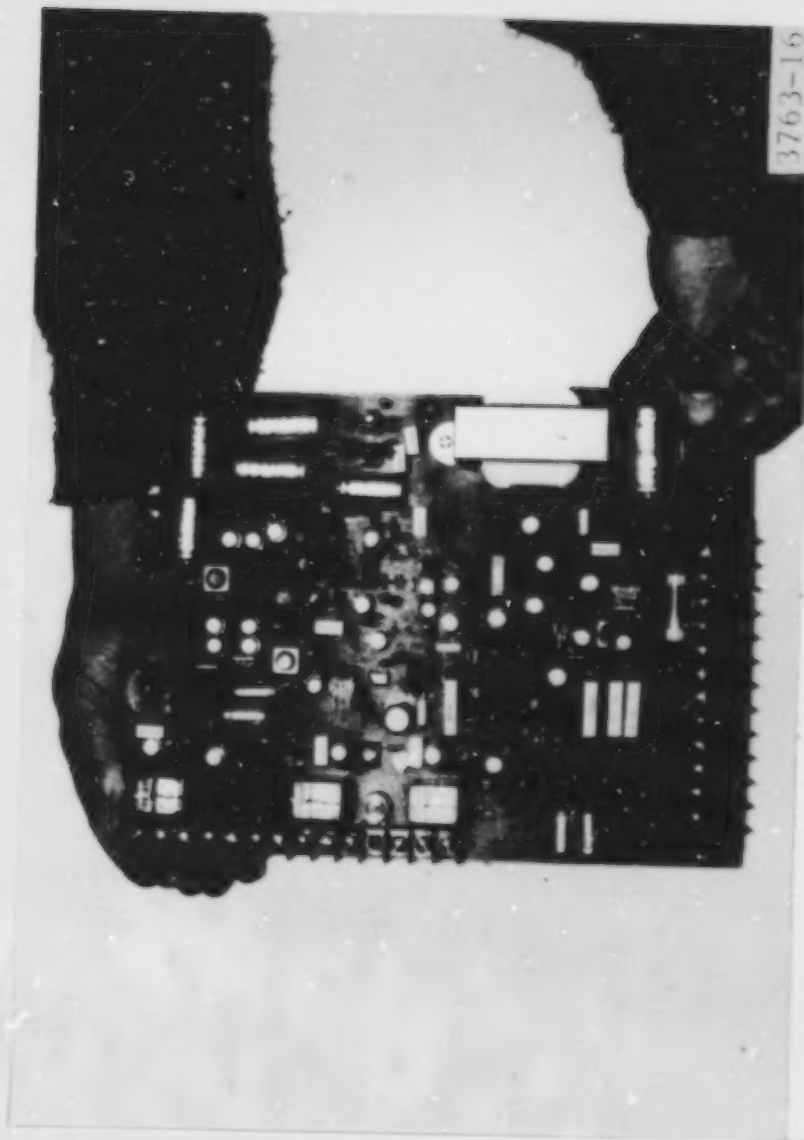
The level of material in a container, tare weight, contents, the volume occupied by the material, pressure exerted by a fluid, emissions of gas or radioactivity, etc., may all be used for monitoring a quantity of material. The method of transferring this information may be mechanical linkage, electric signal, or hydraulic or pneumatic pressure. The readout may be continuous, representing the total range of the container capacity, or it may be for one or more points. Continuous signals may be used to set limits on the contents of the container, and the point signals may be placed in the container to act as limit points. In this way, low-level, high-level, and other alarms may be obtained. The signal activating the alarms can also be used to start or stop pumps and to open or close valves.

The type of level detector or controller must be carefully chosen to be compatible with the material being monitored and the environment in which it is placed. Chemical and physical requirements govern the choice of equipment to be used. Though some level detectors will work well with wet or dry or even both wet and dry materials, others are made only for wet or dry materials. Dangerous, explosive, flammable, caustic, etc. materials in the container or in the vicinity determine the types of level indicators and controllers to be chosen. The material composition of the level indicator in contact with the contained material and the surrounding atmosphere must be carefully considered when choosing a level sensing or control device. The mode of action of the transducer must also be compatible with the material and tank atmosphere (e.g. explosion-proof relays).

Another consideration is cost: Initial cost of unit, cost of installation, operation, and maintenance. A new installation can have equipment mounted within a container at a relatively low cost, but a retrofit may be costly in labor and down time. Operational costs are usually small unless peripheral equipment such as a compressed air system has to be obtained to operate the new equipment. Maintenance costs may be high if the technology is beyond the scope of the maintenance crew. A staff that understands mechanical and simple electrical equipment may be inadequate when dealing with sophisticated electronic installations, and spare parts may not always be available. If parts must be fabricated on site, the cost may be excessive. Figure 1 illustrates components of the equipment used during the course of this project.

In the final analysis, the choice of a level control device to perform a specified task is governed by its ability to perform that task and by the following factors:

1. Compatibility with its environment
2. Configuration to fit in with the physical parameters of the location and materials
3. Cost-effectiveness.



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Figure 1A. Component of level detector equipment. Front view of ultrasonic electronics panel.

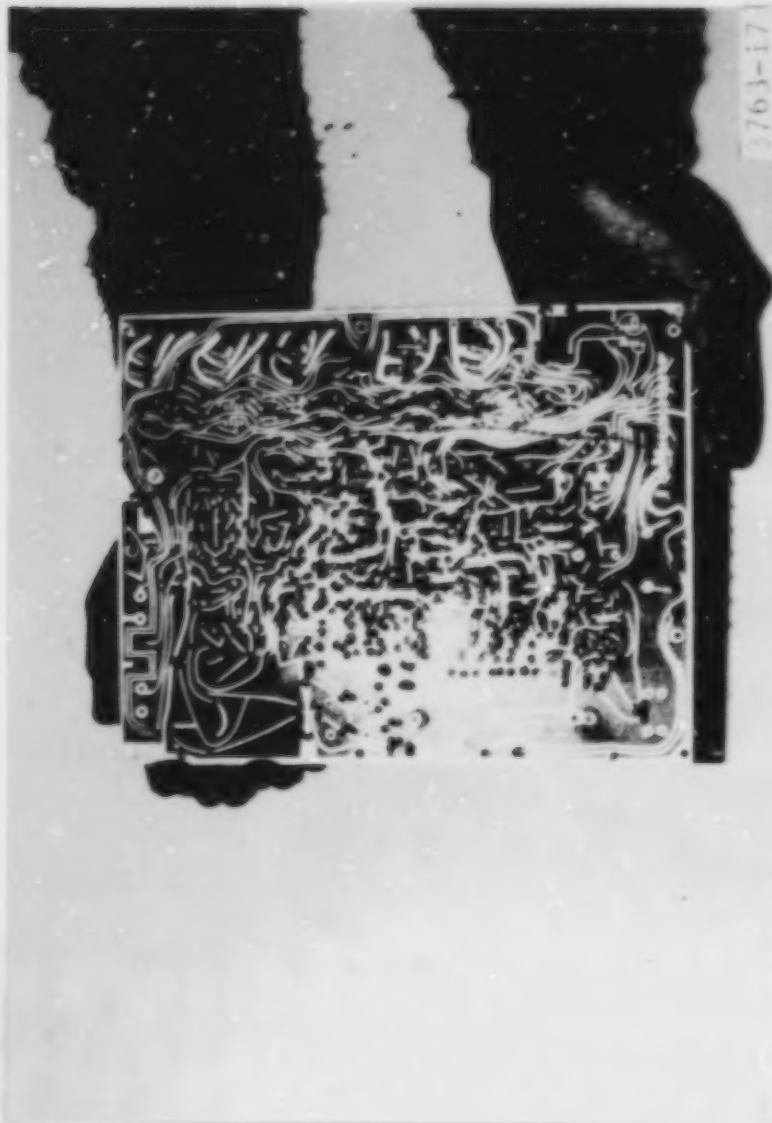


Figure 1B. Components of level detector equipment. Rear view of ultrasonic electronics panel.



Figure 1C. Components of level detector equipment. Assembled vibrating tine unit.



Figure 1D. Components of level detector equipment. Disassembled vibrating tine unit.

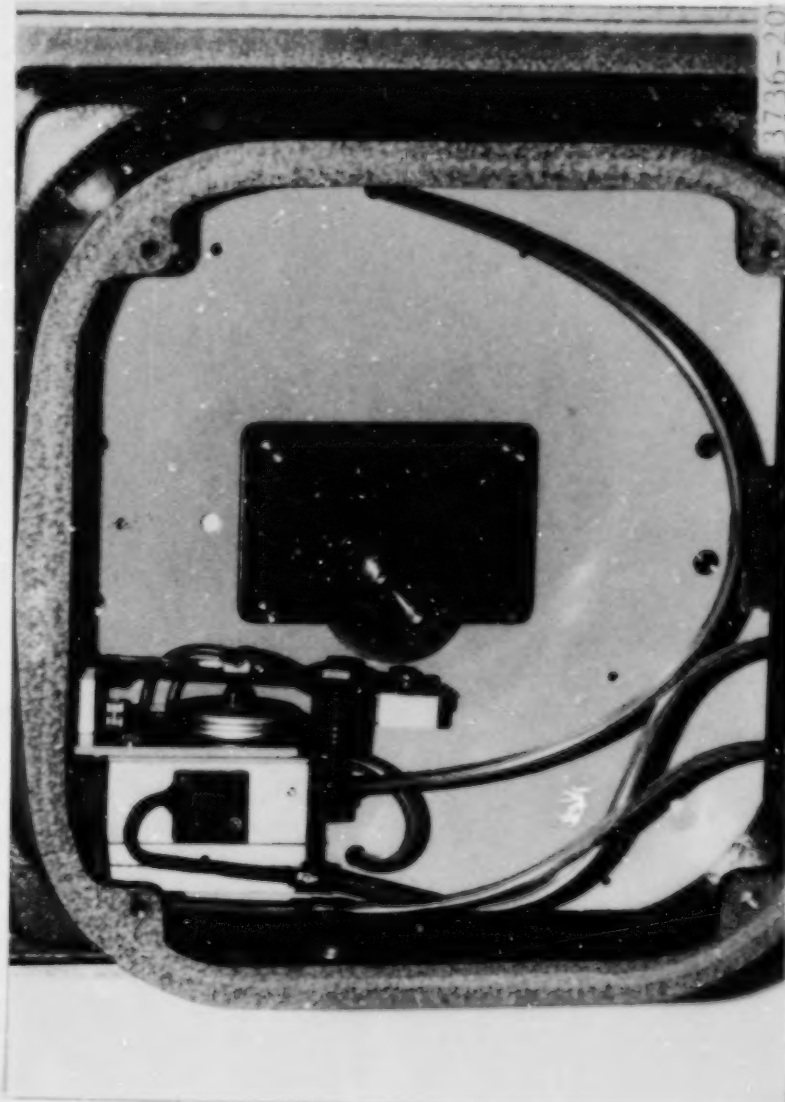


Figure 1E. Components of level detector equipment. Pneumatic transmitter of magnet-coupled unit.

Section 3

RECOMMENDATIONS

This report demonstrated that fail-safe devices can successfully be employed to prevent spills from overfilling containers. Future research should focus on identifying the safest combinations of fail-safe device technology (including fabrication material, transducer and relay systems), controllers, solenoids and automatic alarms for handling hazardous materials. This type of information should ultimately be compiled as a design manual for selecting and implementing automatic fail-safe devices for controlling the levels of hazardous materials within containers.

Section 4

TECHNICAL DESCRIPTION OF LEVEL CONTROL DEVICES

There are many methods of measuring the level of stored material in a container. These range from the automobile dip stick to check crankcase oil level to nuclear radiation devices consisting of a gamma-ray transmitter and receiver. The dip stick (Figure 2) is probably the most common and cheapest level detector, but only answers the question, "how much?" to the operator who has to initiate the action to fill or drain the vessel. More sophisticated methods are needed. Remote reading for convenience and safety, and measurements of pressurized vessels, dangerous materials, and automatic level control are some of the requirements which have led to the development of the modern level detector/controller. The operation of the level detector can be by pressure, capacitance, conductance, float, displacer, paddle switches, weight and tape, ultrasonic echo, inductance, thermal change, light, radiation, and weight. The activation can be electrical, electric/pneumatic, pneumatic, and mechanical. Most level detectors are designed for either wet or dry use but some can measure both wet and dry products.

PRESSURE DEVICES (Figures 3 and 4)

One of the simplest pressure devices for measuring liquid levels is the bubble-tube. An open-ended tube is placed near the bottom of an open tank and air is forced through, causing bubbles to rise through the contents of the tank. The air pressure read on a tube outside the tank, corresponds to the hydraulic head of the liquid contents (Figure 3). Air pressure varies proportionately with the depth of the liquid and may be read directly from the gauges or recorded continuously for a permanent record. An inert gas may be substituted for air.

For pressured vessels a more complicated bubbler system may be used. The tank liquid level in this case is indicated by the differential between the bubbler pressure and the vapor space pressure above the liquid. (Figure 4) The benefits of this system are that it is cheap, easily installed in an open tank, and is simple to operate. The drawbacks are that it may introduce foreign matter into a process, and may interfere with the process and vent system.

Another method of pressure level detection uses a diaphragm in which, as the liquid level rises, the pressure in the diaphragm system rises correspondingly. The level reading can be obtained from pressure gauges or a continuous recording can be obtained through a linkage that moves a stylus. Using pressure switches, fill pumps or valves can also be controlled. The

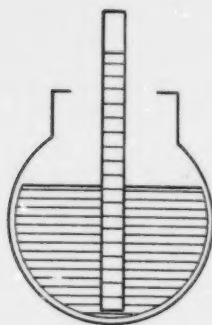


Figure 2. Dipstick

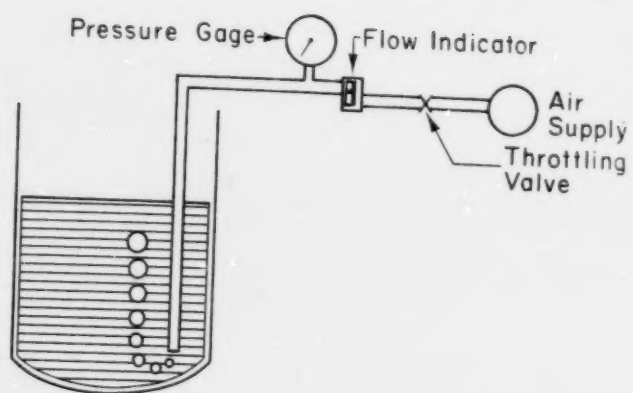


Figure 3. Bubble Tube

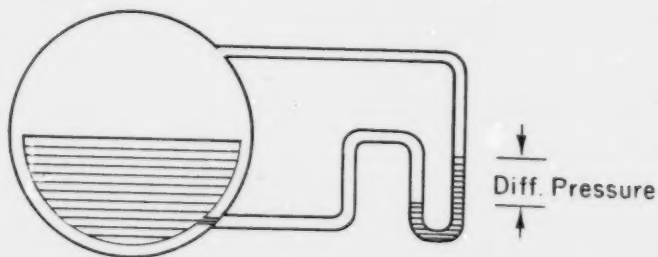


Figure 4. Pressurized Tank

advantages of this system are that it is simple and can be used in explosive atmospheres. The disadvantages are that the diaphragm and tubing are subject to corrosion and wear and a diaphragm in the bottom of a tank can be obstructed by sludge or foreign matter introduced into the vessel by the fill stream.

A differential pressure system is a common means of continuous or point level measurement for a closed vessel. The high-pressure side of the differential pressure instrument is connected to the bottom of the tank, and the low-pressure side is connected to the vapor space above the tank contents. The pressure differential is the hydraulic head of the liquid in the tank.

A typical differential sensor is a pressure transmitter with a force balance system, consisting of a pressure detector such as a diaphragm and a feedback arrangement to balance the force exerted on the detector. The transmitter can measure the pressure over a wide range, and converts the measurement into an electrical or pneumatic signal.

The use of a piezo-electric resistive element converts pressure changes to resistance changes in internal elastic silicon chips, providing a variable electric signal proportional to pressure.

FLOAT LEVEL CONTROL (Figures 5 and 6)

The float level controller is almost as popular as the dip stick. Nearly all modern buildings have one or more float controllers since Thomas Crapper brought the privy indoors in the 19th century. The float-type level indicator follows the liquid level or, if there are two fluids, the interface level. Since the displacement of the float remains constant, the float rises and falls the same amount as the surface, directly indicating the level. Ball floats can be mounted in the container at the top, sides, in a standpipe, open or caged. They can activate pumps, valves, etc., by means of mechanical linkage, electric switches, or pneumatic transmitters.

A variation of the simple float level indicator is a float on the liquid surface, usually in an open or vented tank connected by a tape or cable over an external sheave to a counterweight. The position of the counterweight on an inverse scale indicates the level of the liquid surface. Another system may make use of the rotary motion of the sheave to drive a recording pen, or activate linkage to operate a switch. In some cases, the tape is taken up by a spring-loaded reel eliminating the counterweight and sheave. The rotary position of the reel indicates the level of liquid in the tank and can be linked to switches or other controlling devices.

A further variation of the float is the displacer in which the float is nearly stationary. As the liquid level changes, the buoyancy forces change by the amount of weight of the displaced fluid. When the liquid level rises, the apparent weight of the displacer decreases. This provides a linear relationship between supporting spring tension and the liquid level. One of the uses of the displacer type level indicator is the detec-

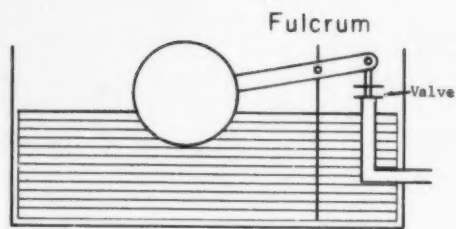


Figure 5. Ballcock

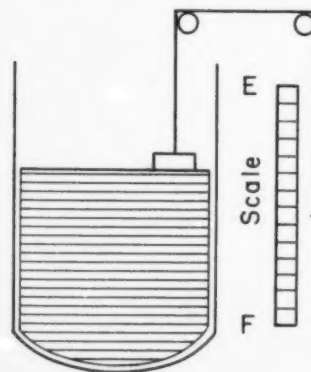


Figure 6. Float

tion and level indication of the interface of two liquids with different specific gravities.

CAPACITANCE LEVEL DETECTION (Figure 7)

A variable capacitor is formed when an electrode is mounted in a tank which has metal walls (or, if the tank is not conductive, another electrode is mounted at a distance from the first electrode). The capacitance between the electrodes varies with the depth of material in the tank exposing more or less surface of the electrodes. Usually in shallow tanks (up to 10 ft depth), the electrode is continuous for the full depth. Deeper vessels use one or more cable-hung electrodes which are anchored where needed in the tank. As the material filling the tank rises, the dielectric constant varies directly with the level. The capacitance is measured and the readout meters are calibrated for the depth of the container.

If the material measured is conductive, the electrode probes must be sheathed with an insulating material. Capacitance level detectors may be point indicators or may be continuous. Point indicators are mounted horizontally so that the entire electrode is immersed at some time providing greater accuracy. The most serious drawback to the capacitance level detection system is that it is prone to being coated by adhering material which will result in false readings.

CONDUCTIVE LEVEL MEASUREMENT (Figure 8)

Two probes in a conductive fluid with a device to measure the current flowing can sense the point level of the contents of a tank. Usually the tank is used as the grounded electrode and a high level and low level electrode is used. The outputs are connected to control the starting of a pump at the low level and the shutting off of the pump at the high level. Variation in conductivity and temperature must be considered. Splashing, foaming and turbulent liquids can upset the readings and give false levels. Any buildup of material on the probes can contribute to false reading.

THERMAL PROBES (Figure 9)

A thermal probe is a point level indicator using a self-heating glass bead thermistor as a sensing element. Since the heat dispersion is greater in a liquid environment than in a gaseous environment, a large voltage change is evidenced when a liquid level rises to envelop the sensing element. The thermistor probe is a negative-coefficient resistor in which resistance increases proportionally to the decrease in temperature. Therefore, with greater heat dispersion in a liquid, the sensor cools and a greater voltage signal is sent to the amplifier which in turn operates relays controlling valves, pumps, etc.

SONIC ECHO LEVEL MONITORS (Figure 10)

Sonic echo devices used to monitor the level of materials in a tank consist of a pulse generator, transmitter, receiver, amplifier, and control

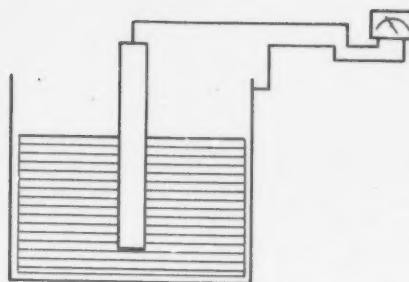


Figure 7. Capacitance

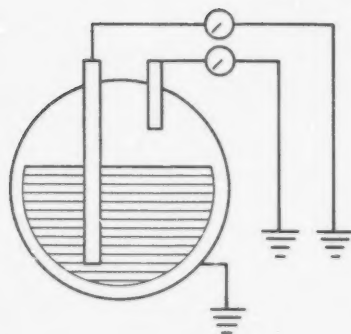


Figure 8. Conductance

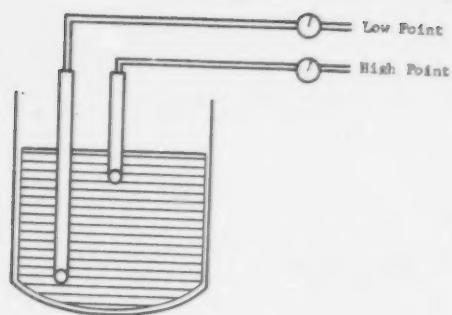


Figure 9. Thermal Probe

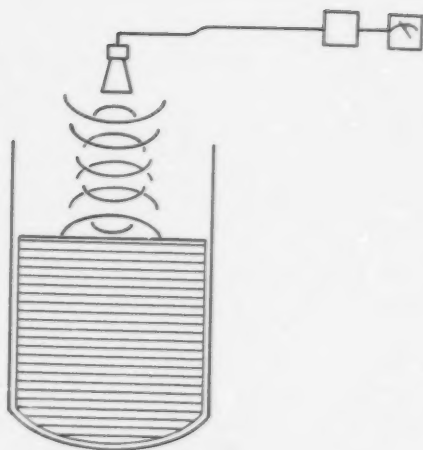


Figure 10. Echo (Sonic, Ultrasonic)

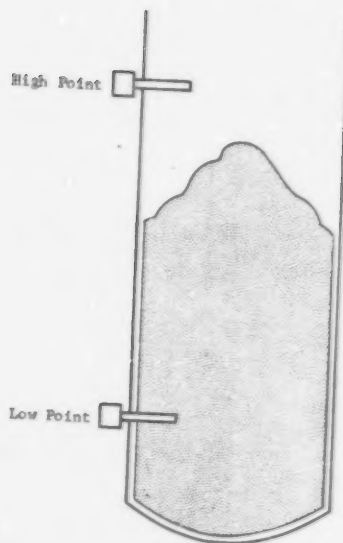


Figure 11. Vibrating Forks or Rotating Paddle

circuits. There are ultrasonic, sonic and sonar echo devices. The principle of the sonic operation is to measure the time the sound pulse takes to travel from the transmitter to the reflecting surface and return to a receiving element. The measured time is directly related to twice the distance between the surface of the material and the transmitter/receiver. The signal received, which indicates the quantity of material, can actuate control of valves or pumps, controlling the filling or emptying of the storage tank.

Ultrasonic and sonic systems are very similar. Both are non-tactile and can be used for point and continuous measurement. The transducer, usually both transmitter and receiver, is mounted directly over the material and the generated sound waves are directed to the surface. The elapsed time before the echo is received is directly proportional to the space between transducer and material surface.

Sonar units measure interfaces using the same reflective principles but are usually immersed in the material being measured and the signal is reflected internally from the surface. These units are relatively inexpensive, accurate, usually easily retrofitted to an existing tank, and non-tactile. The disadvantages are that they are affected by changes in temperature and must be compensated by approximately 1% for each 5.5°C (10°F) variation. In addition, turbulent, frothing and foaming liquids may absorb the sound signal resulting in no echo.

INDUCTIVE LEVEL DETECTOR

Inductive systems are used to detect the level of conduct metal objects. As the metallic object enters into an electromagnetic field produced by an oscillator, it disrupts the field. This disruption varies a voltage-sensitive circuit which operates a relay activating a control system. Only under special conditions are induction systems used to monitor levels. These systems are usually used in process lines to detect tramp metal to prevent damage to process machinery.

ROTATING PADDLE LEVEL DETECTOR (Figure 11)

Rotating paddles detect the presence or absence of bulk material at a specified level in a tank. They are used for point level detectors. A small electric motor provides constant paddle rotation while the paddles are clear of any solid material. When the vessel is filled to the level of the rotating paddles, the paddles stall and a switch is actuated, signaling a cessation of rotation at the level caused by the material in the tank. Paddles may be used for high-point, low-point, or any other level detection. They may be top mounted or through-wall mounted depending on their function. Paddle size will vary with the density of material being controlled. These devices can be used when the vessels have a positive or negative pressure as well as at normal atmospheric pressure.

VIBRATION LEVEL DETECTORS (Figure 11)

Tuning fork, vibrating paddles and vibrating probes are used as point level detectors. All work on the principle that when the vibrating element comes in contact with a bulk material after being exposed to gas (air), or if two bulk materials of different densities are encountered, the vibrating frequency either stops or is changed.

Tuning forks are driven by peizo crystals; vibrating reed switches drive the vibrating paddles and the vibrating probe is driven by an ultrasonic oscillator.

All vibration detectors must be used in dry bulk which does not arch or bridge and is not sticky. Any cavity formed by the vibrations or any material adhering to the surfaces will produce false readings. Vibrating sensors can be top, side or bottom mounted at the level desired for control of the tank contents.

AUTOMATIC SOUNDING (Figure 12)

Automatic soundings are made with a weight (for bulk materials) or float (for liquids) and cable device to measure the level of materials in silos, bins or tanks.

This device is a motor operated drum which may be acutated manually or automatically to obtain a continuous record of the amount of material in the vessel. When the motor is actuated, the measuring cable with the float or weight at the end runs out producing an electrical pulse at regular intervals. The pulses are counted and the number counted are an inverse indication of the quantity of material stored in the vessel. When the weight touches the bulk material (or the float touches the liquid surface) the drum then rewinds the tape onto the drum. This unit can be set to operate upon command or automatically at regular intervals. Set points for automatic control of stored materials are easily established.

The operation of these devices is unaffected by temperature changes, dust, or humidity. Soundings may be in error when sticky materials adhere to the plumb, when the measured bulk material has a high angle of repose, or if there is very little density to the materials.

LIGHT AND SIGHT GLASS MEASURMENT (Figures 13 and 14)

A method of point determination is the light beam breaker which consists of a light source and photo cell connected to light conducting plastic probes which protrude into the tank space and are separated by a gap. When the stored material interrupts the light path a relay operates to activate the control circuits. When the material falls below the probes the relay is deactivated or another relay is cut in and other control circuits take over. This type of beam breaker, when inside a tank, can become fouled and the light blocked. To remedy this, a beam breaker control may pass light through a sight glass and will operate upon changes in light intensity.

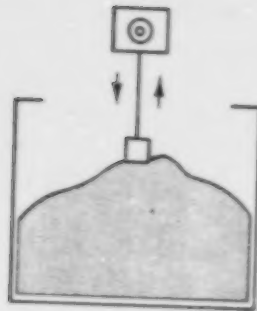


Figure 12. Automatic Sounding

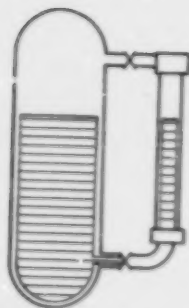


Figure 13. Sight Glass

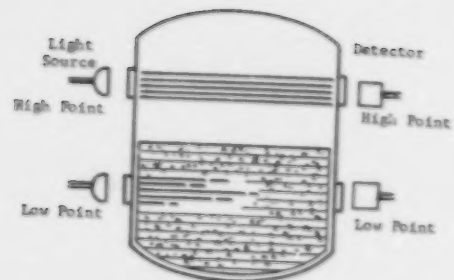


Figure 14. Light Beam

These control elements may be used as high, low, or intermediate point indicators and can be tied into control systems.

Another method employing light is to use a directional light source, focused on a phototransistor. As the filling liquid immerses the light source the change in refraction causes the photo transistor to become inactive and the detection circuit triggers relays to operate controls. This method is for point detection.

The basic sight glass is a glass tube between a pair of valves used for visual checks of the amount of material in the tank. Where pressure or corrosive problems exist, a magnetic float in a nonmagnetic guide-tube either inside or outside the tank ascends and descends with the liquid surface; as it does, it passes a series of visible magnetic indicator wafers. As the float magnet attracts the wafers the level of the liquid surface is indicated to the viewer. The system can be connected through relays to activate a pump or valve control.

RADIATION LEVEL MONITORING (Figure 15)

The use of isotope sources level controls, when properly installed, present no hazard to plant personnel but are not widely accepted. They are economical in spite of the fact that the radioactive controls are usually more expensive than other types. Operation and maintenance costs are low as are installation costs. Both source and detector(s) are mounted externally and are able to monitor almost any liquid or solid. These instruments are used for point or continuous level detection.

For point level detection a radioactive source produces a gamma ray beam which penetrates the vessel walls and, when there is no product intervening, strikes a detector. The detector, a Geiger counter, produces an electrical impulse in relation to the gamma photons received. When the material in the vessel rises to intercept or scatter the photon path, a different intensity of impulses is produced by the detector. Since the pulses are integrated and transformed into a d.c. signal proportional to the radiation received, the difference between the signal for empty tank and full tank is measured and can operate relays actuating the control circuits.

For full-range level indication and control the source has a wider angle of emission to cover the full height of the range to be measured and a continuous level detector is used. As the vessel fills, more and more of the continuous level detector is blocked off by the material so the signal received varies inversely with the material level in the container. This signal is transmitted through relays to actuate the control circuits and also may give an indication of the level.

An AEC license is not required for radiation sources using 10 milligrams or less of radium. Sources using Cobalt or Cesium do require AEC licensing.

MICROWAVE LEVEL MEASUREMENT

Microwaves may be used when a non-tactile level readout or control devices are required. The system consists of a transmitter, oscillator and directional antenna; and receiver, directional antenna, amplifier, pulse coding network, voltage comparator circuit and a relay driving circuit. Microwaves emitted from the directional antenna and picked up by the directional receiver are converted into a low-level pulsed d.c. signal.

The conductivity of the material being measured determines the signal attenuation. Metal tanks and hoppers reflect microwaves, and storage vessels using this method of measurement must be provided with windows of materials such as high-density polyethylene. Air transmits microwaves with little or no loss, while water-based materials or those materials with a significant water content, such as grain or wood, absorb them. As the air space in the microwave beam becomes filled with a material the transmitted microwaves are either cut off from the receiver or are sharply reduced. This method can be used for point level indication or to drive a control system.

PRESSURE TAPE (Figure 16)

One direct-pressure method is the use of a pressure sensitive tape. A tape made up of a loop of resistance wires or contact points, normally held apart, is inserted in the vessel to be measured. As the product is introduced to the vessel, pressure on the tape forces the wires into contact. As the vessel fills the wires touch or contact points close shortening the resistive path of an electric current. The resistance is measured and varies inversely with the level of the stored product. This type of instrument continually measures the level in the vessel and can activate relays at preset points to control process, fill, and discharge.

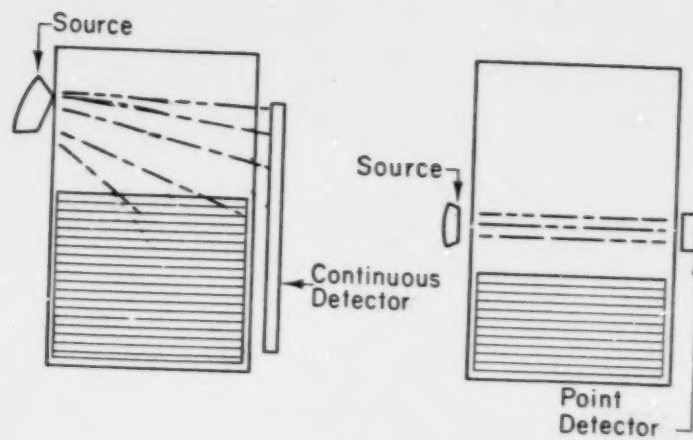


Figure 15. Radiation

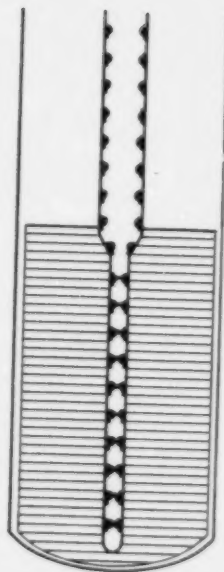


Figure 16. Pressure Tape

Section 5

RESULTS AND DISCUSSION

This program consisted of an assessment of the state-of-the-art of fail-safe level controllers, the acquisition of three devices, a demonstration and development of required modifications, and the installation of the three units at host industrial plants where they could operate under actual on-site conditions for an extended period of time.

To gather information on the types and operational modes of the fail-safe level controllers, letters were written to 281 manufacturers explaining the project and soliciting brochures, technical data and specifications. The response was disappointing; more than half did not reply. This lack of response may have resulted from the disappearance of many marginal businesses, although their names still appeared in industrial catalogs. Nonetheless, excellent cooperation and information was received from the 131 manufacturers who replied and submitted data on 264 configurations of level detectors.

The level detectors, based on information received, were given the following classification:

- 1) Medium to be controlled:-Wet, dry, wet and dry.
- 2) Mode of Operation:-Float, Capacitance Changes, Pressure, Temperature Change, Moving Paddles or Plates, Ultrasonic, Radio Frequency, Radiation, Light, Electrical Conductance.
- 3) Control Activation:-Electricity, Pneumatic Pressure Change, Hydraulic Pressure Change, Mechanical Linkage.

A breakdown of the above classifications by manufacturer and device is provided in Appendix A.

The choice of equipment to be tested under operating conditions was discussed with, and chosen in cooperation with three industrial concerns, each having a different problem with a different product (Figure 17, 18, 19).

OVERLOAD CONTROL FOR OUTDOOR GREASE STORAGE

A hog processing plant, J. Lynn Cornwell, Inc., Purcellville, VA, had a history of near spills and small spills as a result of overloading a 10,000-gal heated, outdoor grease tank. All spills entered the yard drain and went through the grease removal equipment prior to effluent discharge into a stream. However, the spills and equipment were time consuming to

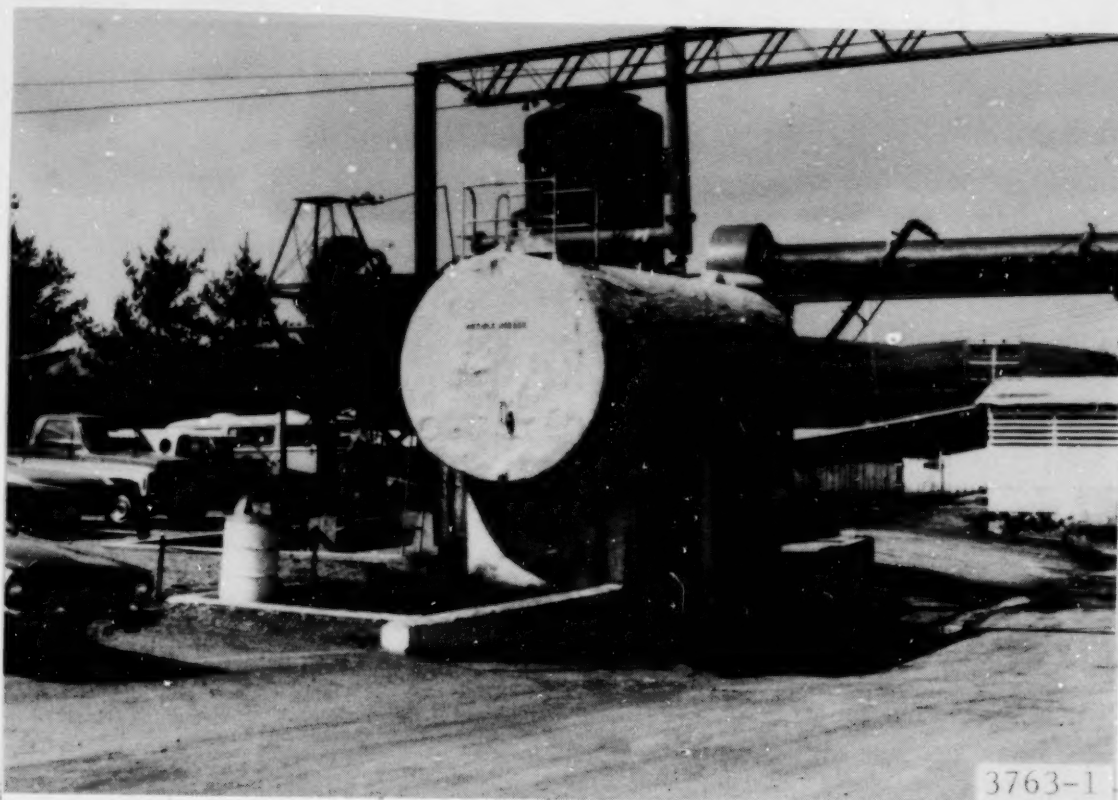


Figure 17. 10,000-Gallon Grease Tank at J. Lynn Cornwell Company



Figure 18. Dry Chemical Bulk Silos at Teknor-Apex Company.

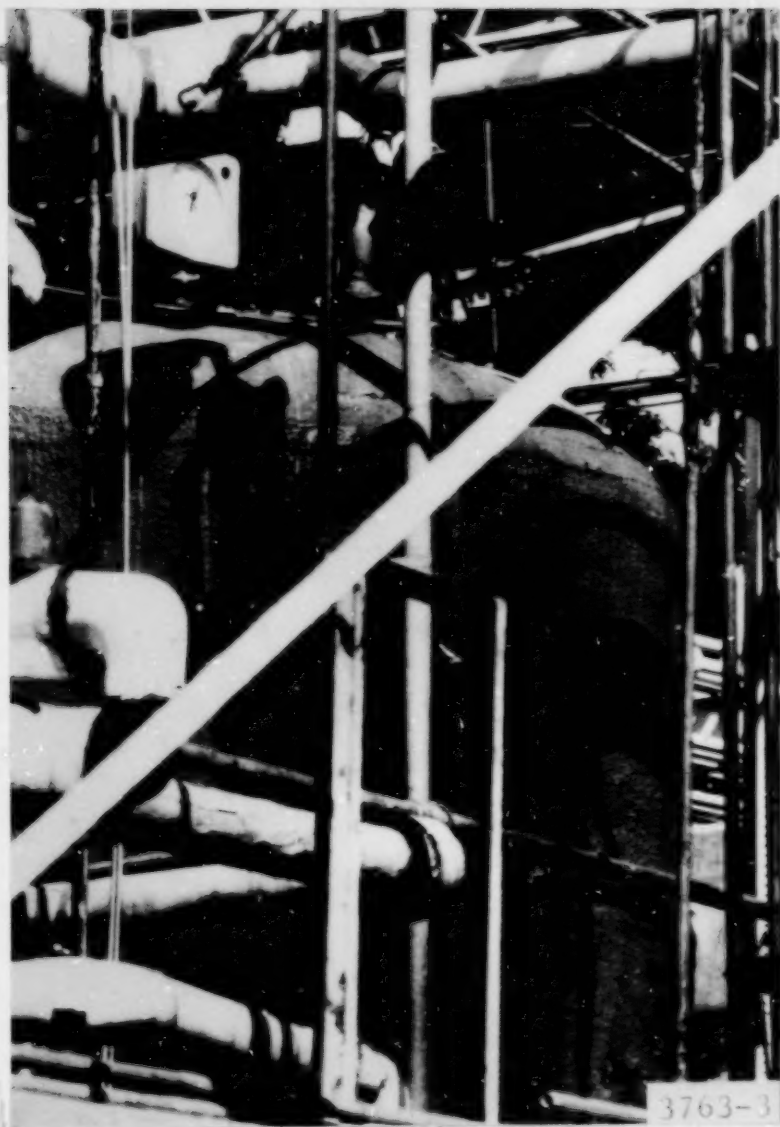


Figure 19. Solvent Tank at the "Large New England Chemical Manufacturer".

clean. Discussions with Mr. Cornwell resulted in the selection of an Inventron ultrasonic controller to control the grease tank fill pump by means of an ultrasonic transducer mounted on the tank connected to controls mounted in the pump room. The ultrasonic unit was chosen for its non-tactile properties to prevent grease overflow. The controls had high and low set points and direct meter readout showing the amount of grease in the tank. During preliminary tests at the FMRC Laboratory the instrument was accurate within less than 3/4 in. in 9 ft (Figure 20).

The controls would shut off the fill pump when the level of grease in the tank reached a predetermined high level. Further, if there were a loss of signal due to transducer clogging or electronic failure, the power to the pump would be cut off. This fail-safe mode prevented tank overfilling in case of accident or controller failure.

Two problems appeared during operation of the Inventron unit:

- 1) The first was the difficulty that the plant maintenance crew had with electronic circuits. Adjustment of the equipment had to be performed by the manufacturer's personnel;
- 2) The other problem did not appear until winter weather set in. It was found that the heated grease caused condensation on the working surfaces of the transducer causing a loss of signal and shutdown of the fill pump. This was remedied when wiping the moisture off the transducer became a part of the daily maintenance schedule.

This level controller was installed in April, 1975 (Figures 21 and 22) and removed in July, 1978 after the hog dressing operation shut down. After running for more than three years the plant management reported that spills had been eliminated due to the automatic cutoff of the fill pump. Not only was the danger of spills eliminated, but fewer personnel were required to fill the tank, and probably the biggest plus was that no grease was lost and all could be sold.

Upon plant closedown at J. Lynn Cornwell, Inc., the Inventron ultrasonic unit was installed at Bird & Son, Inc., in Walpole, Massachusetts. Bird & Son, Inc. made a paper backing for roofing material at this plant. Their requirement was for a continuous monitor of the paper pulp chest that fed a paper-making machine. The layout of the plant was such that no visual observation of the quantity of pulp in the pulp chest was possible. This resulted in frequent spills due to control difficulties. A remote reading gauge, coupled to a fail-safe control on the pulp chest, effectively prevented these spills. This arrangement worked well for over two years until Bird & Son, Inc. phased out the papermaking at the Walpole plant and the Inventron level controller was taken out and returned to FMRC in December, 1980. Upon receipt, the unit was tested in the FMRC laboratory and worked well after having operated 5 1/2 years in harsh environments.

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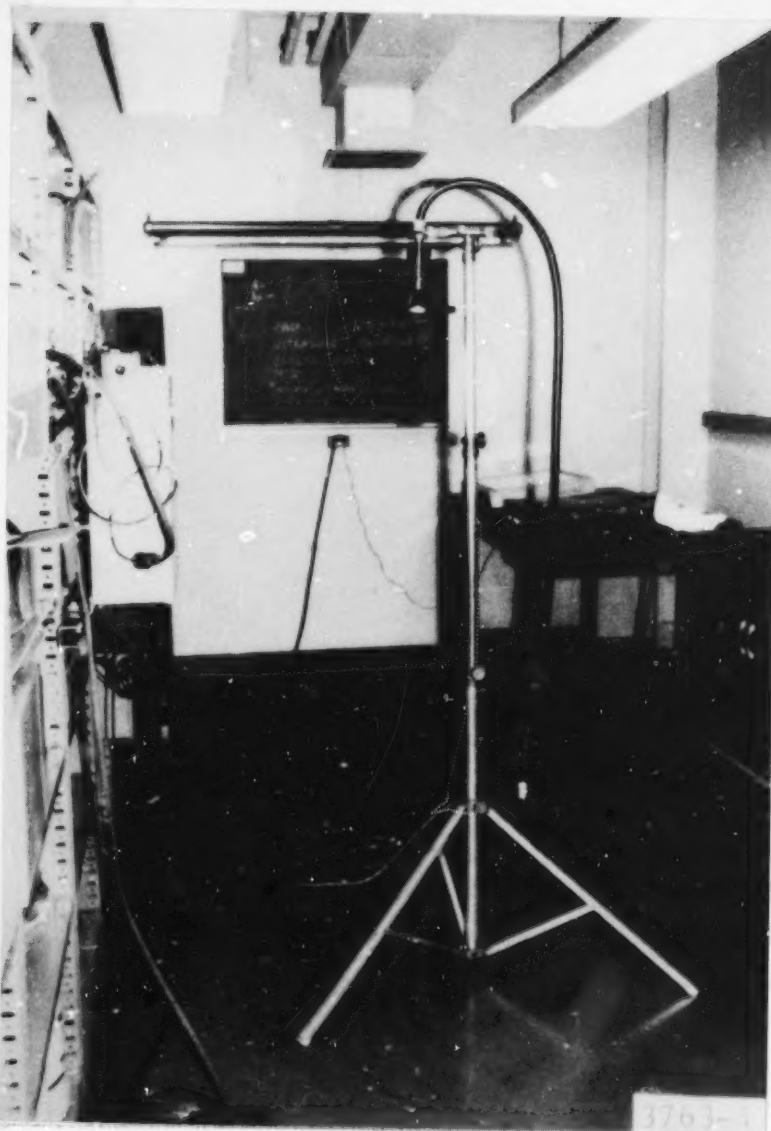


Figure 20. Test Setup for Ultrasonic Level Detector.

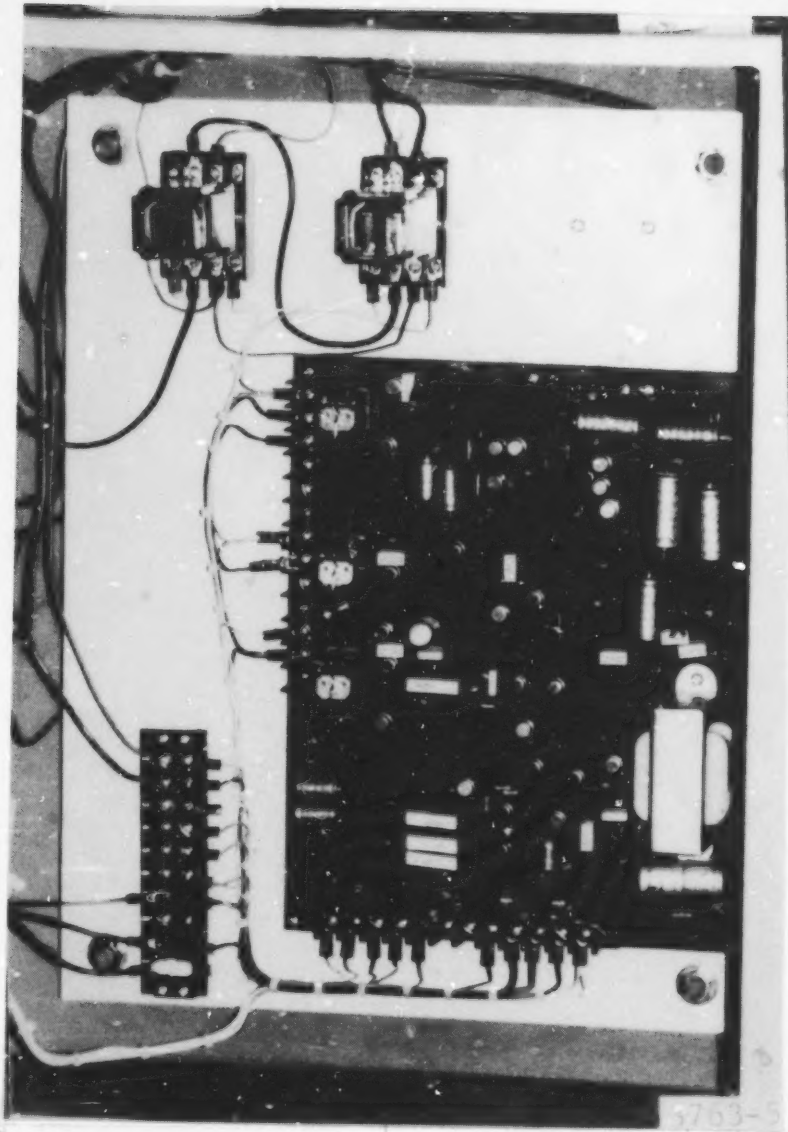


Figure 21. Control Cabinet for Ultrasonic Level Detector.

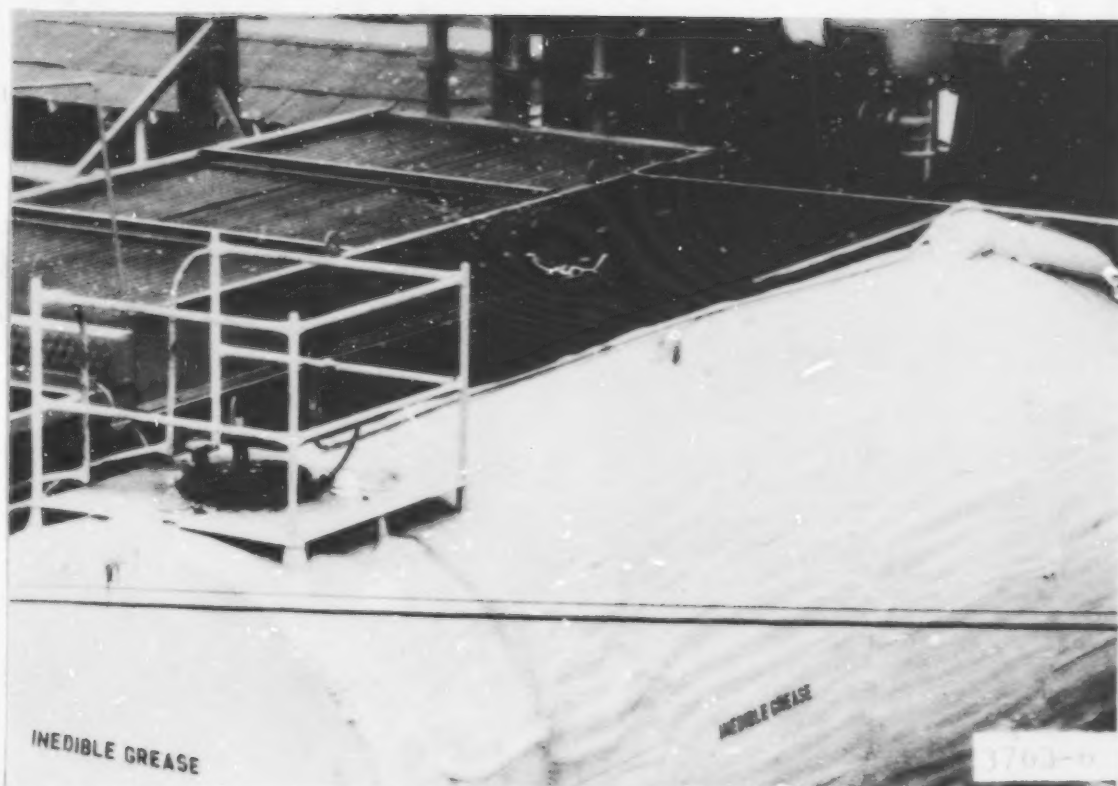


Figure 22. Ultrasonic Level Detector Transducer on Man-hole Cover of Grease Tank.

FILL CONTROL FOR DRY POWDER SILO

The second industrial plant in which a fail-safe level controller was installed was Teknor-Apex Co. of Pawtucket, Rhode Island. Discussions with Messrs. Malin, Smith and Long revealed two problems. The first problem involved a method of measuring and controlling the filling of an Atomite silo. Atomite, a very fine calcium carbonate, is a dry powder material which will pack and bridge. The second problem involved a dry powder, PVC. Both materials are stored in outside silos and both had caused problems with conventional level sensors. It was decided that the Atomite silo could have level control and fill control by using a load cell arrangement, but this was abandoned because of the structural work involved. The PVC silo presented a problem in that most level controllers deal with liquids or slurries which have a level or nearly level top surface, whereas dry materials fill with a conical surface and draw down with an inverse conical surface. While PVC is a suspected carcinogen, it is not considered an extremely hazardous material. However, there are many dry materials which are hazardous. Therefore, Teknor-Apex Co. and FMRC decided to monitor the PVC silo to demonstrate the performance of fail-safe devices when being used on dry materials. A system using two sets of vibrating forks was chosen which would indicate the high cutoff point and a low refill point (Figures 23 and 24).

Appendix B provides the vendors address. Rather than change the filling arrangement in use at that time, the fail-safe device was used to simulate the control, (i.e., signal the operator). A series of signal lights on the panel board indicated to the operating personnel the relative fullness of the silo and gave warning as to the approach of the ultimate silo capacity while being filled. The sequence is shown in Figure 25.

This system worked well for the plant personnel responsible for chemical storage as the indicator light gave ample warning. One problem did appear when the PVC filling proceeded at a rapid rate. The silo was loaded from the top and sometimes a vagrant area of material would momentarily dampen the vibrating tines on the upper unit. This would trip the relays and would cause the simulated fill motors to shut down. With the relays tripped the silo would have to be drawn down to the low level and permit the lower Vibratol unit to vibrate before the pumps could be reactivated. (This did not occur when the level control system was simulated and used for a high level indicator to help prevent overfilling.) The problem of the vagrant streams could have been eliminated by two methods. 1) Install a sheltering baffle over the upper unit which would prevent falling material from damping the operation of the tines but would allow the material to dampen the tines when at its natural angle of repose when the silo had been filled to the high level. 2) Install an electrical delay in the circuit so that relays would not trip instantly but would permit a time lag to allow the vagrant stream to shift.

This unit was in operation for five years until September, 1980, when the system failed. Both units of the system were returned to the manufacturer for diagnosis. The physical condition was good in spite of prolonged

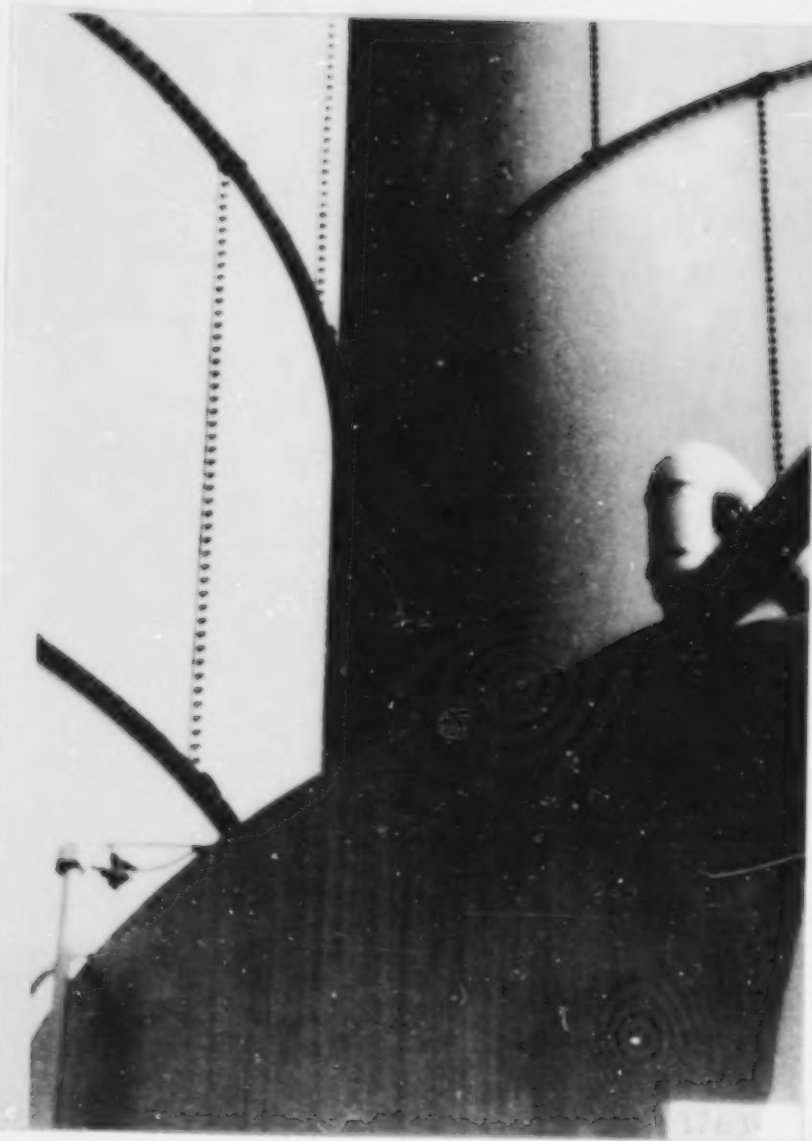


Figure 23. Vibrating Fork Level Detectors on PVC Silo.

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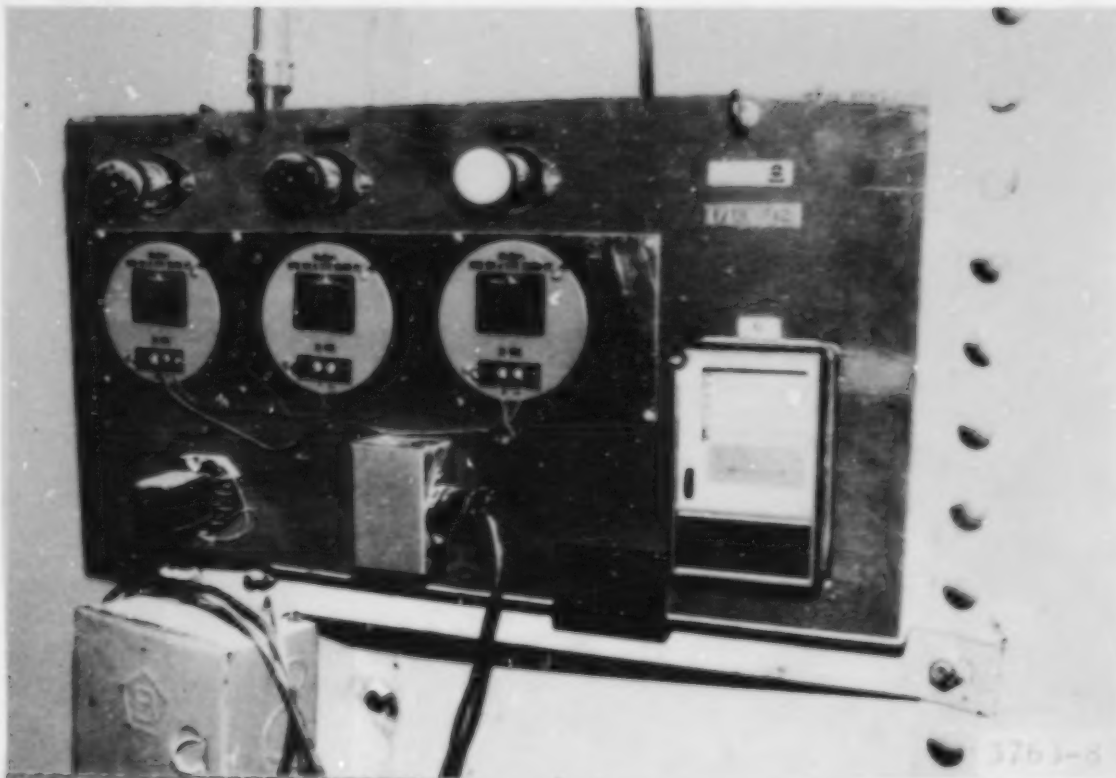
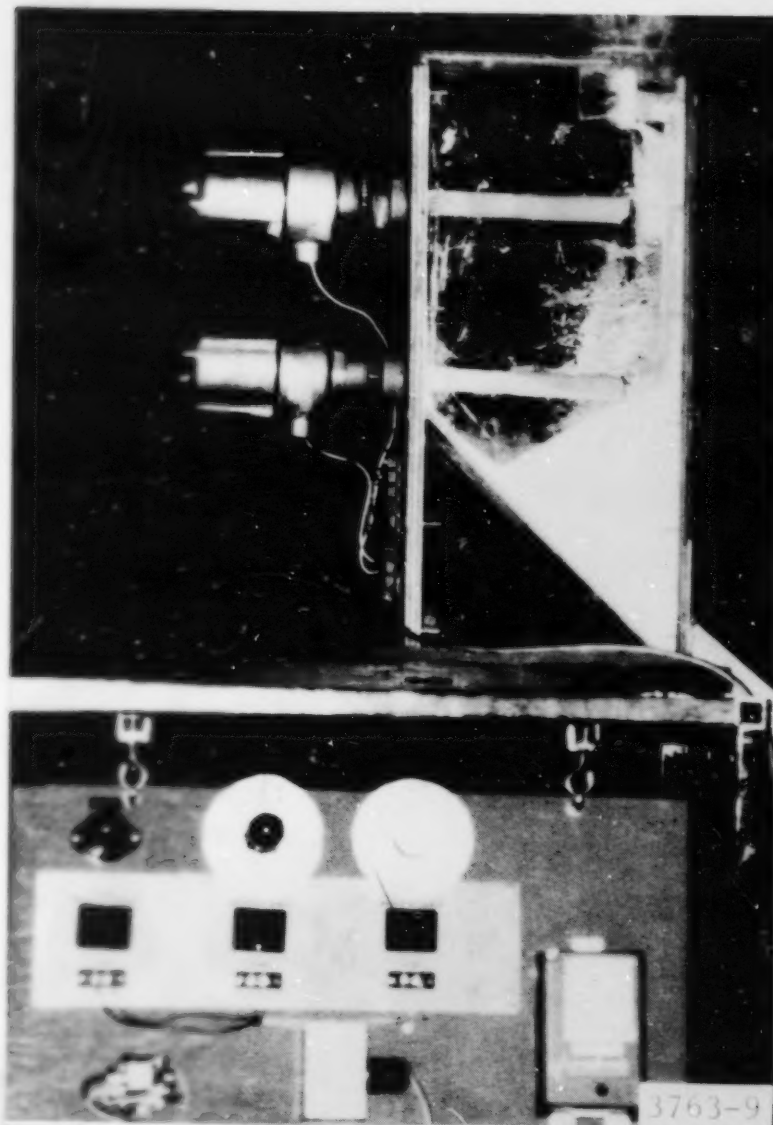
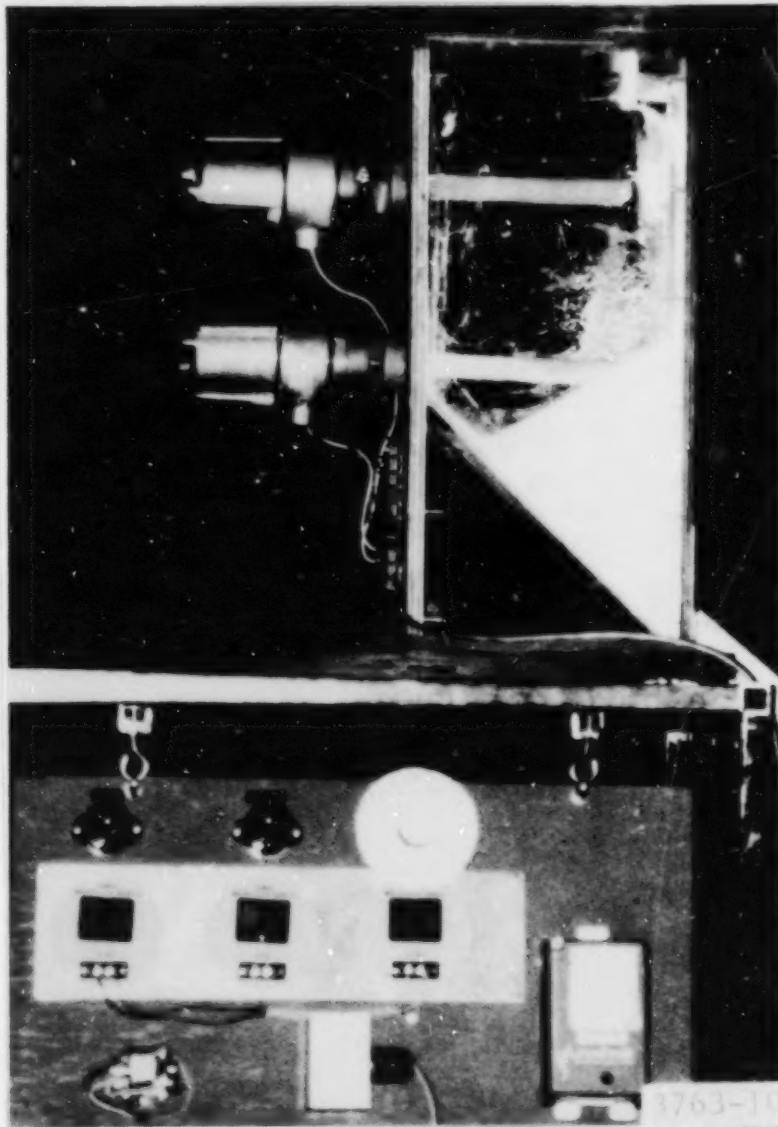


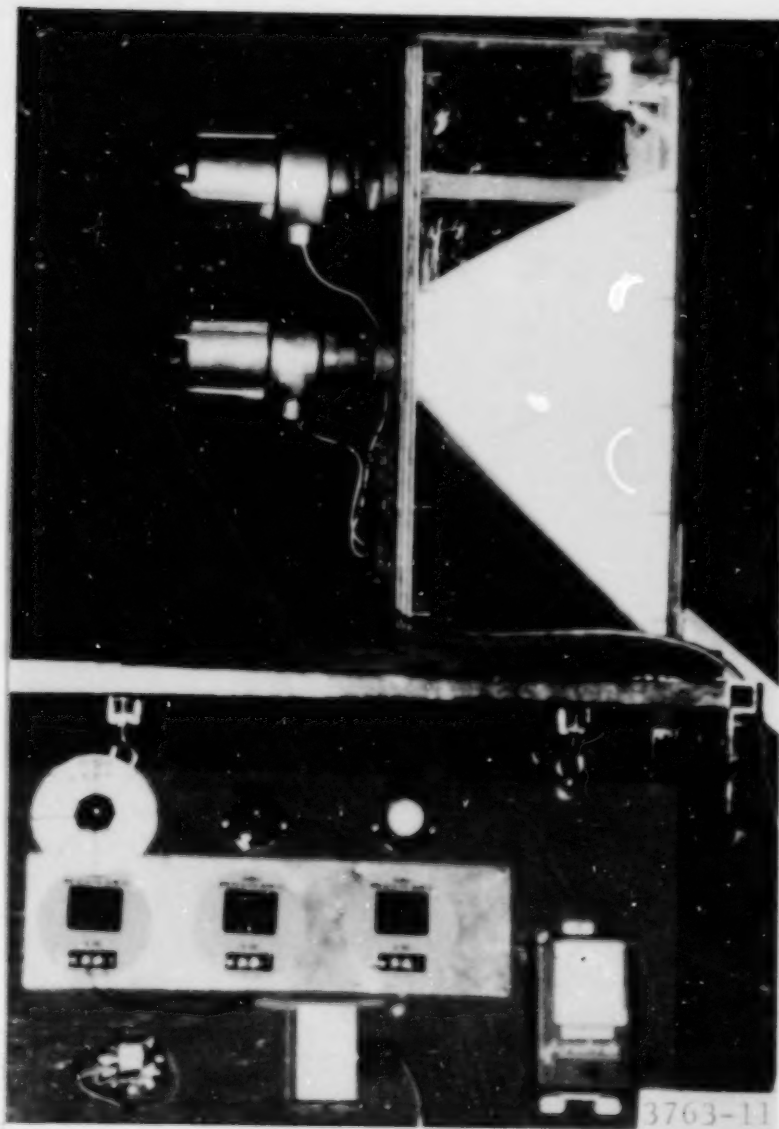
Figure 24. Control Panel of Vibrating Fork Level Detector
Mounted on Skirt of Silo.



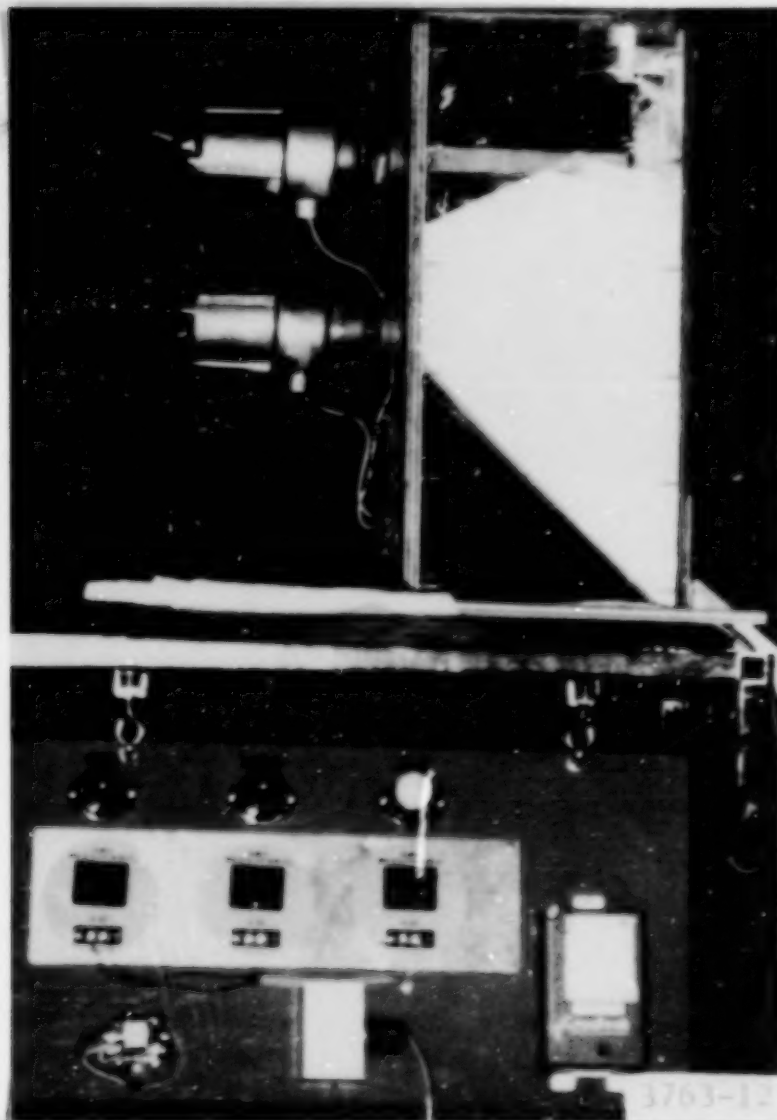
25A. Mock-Up of PVC Silo. Silo Empty



25B. Mock-Up of PVC Silo. Silo Filling



25C. Mock-Up of PVC Silo. Silo Full



25.D. Mock-Up of PVC Silo. Silo Emptying.

exposure to the severe New England climate. The manufacturer found that there was a defect in a relay and a damaged time assembly. Both faults were probably caused by wear and represented a normal life expectancy for system components that are operated in inaccessible locations and cannot be adequately serviced. The cost of repair was estimated at approximately \$280.00.

EXPLOSIVE SOLVENT FILL CONTROL

A Brooks Maglink, Model 5320-GTG-D, (Appendix B) was chosen by the plant engineering staff. This unit replaced an inoperative diaphragm type level sensor which controlled a pneumatic fill valve. The tank, known as S-123, is used to store acids and solvents and is located in an area that could periodically be explosive. The requirement for explosion proof equipment prescribed a variable pneumatic signal output. The Brooks Maglink unit produced a pneumatic signal that was 3 psi when the tank was empty and increased to 15 psi when the tank was full. Two pressure switches in a remote control room were activated by this pneumatic output signal from the Brooks unit on the tank. One pressure switch was set to interrupt a signal to a solenoid valve at 15 psi or more and the other at 3 psi or less (Figure 26). The solenoid valve supplied air pressure to operate a pneumatic fill valve. Thus, if the tank filled to cause the Brooks Maglink to produce a 15 psi pressure, the fill valve was shut and no more material could enter. The second pressure switch, when subjected to 3 psi or less, caused the signal to the solenoid valve to be interrupted and shut off the air to the fill valve, closing it. This was a safety precaution making the system fail-safe in that any shutdown of the pneumatic system due to air supply loss, air-line failure, loss of control by jamming the Brooks unit, or loss of air for any cause would keep the fill valve shut preventing tank overflow.

This system was tested at the FMRC laboratory upon delivery in May, 1975 (Figure 27). Both gauge pressure and the mercury manometer pressure were found to be linear throughout the range of depths governed by the position of the float on follower guide tube. Repeatability showing depth within an inch was obtained.

The instrument was installed during plant shutdown in July, 1975 (Figure 28). In the winter of 1976 the first breaking of the magnetic bond between the follower and the float occurred. This was remedied by feeding the follower back down the guide tube after disentangling the follower cable from the take-up reel where it wound up too rapidly. Disengagement of the magnetic bond occurred frequently until a more powerful magnet was supplied by the manufacturer. There were also other malfunctions which occurred during approximately 5 1/2 years of operation.

It was felt by the operators and supervisory personnel at the "large New England chemical manufacturer" that, considering the time the Brooks Maglink unit was in operation and considering the unfriendly environment in which it operated, the number of outages was not excessive. Furthermore, with some design changes to the follower magnet, follower tape, float, float stop and end plug, it is felt that this unit could be trouble free.

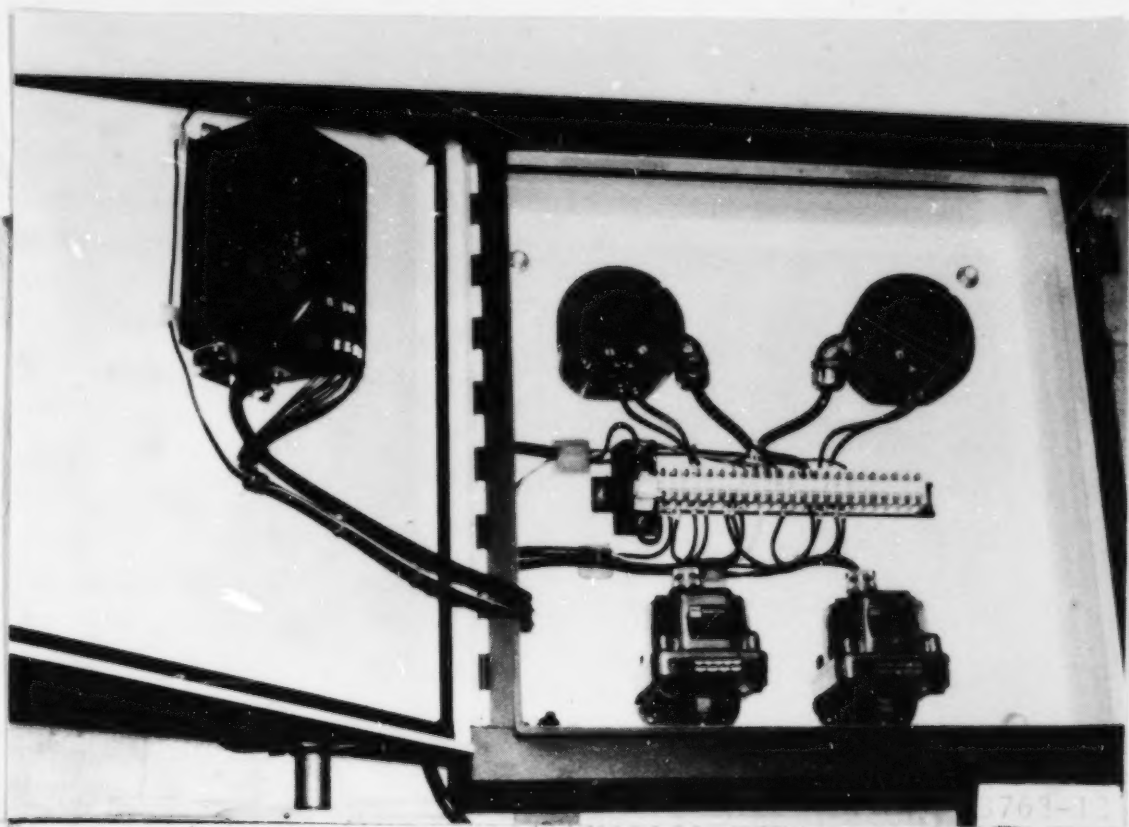


Figure 26. Control Panel Showing Pneumatic Pressure Switches - Magnet-Coupled Floor Level Detector.

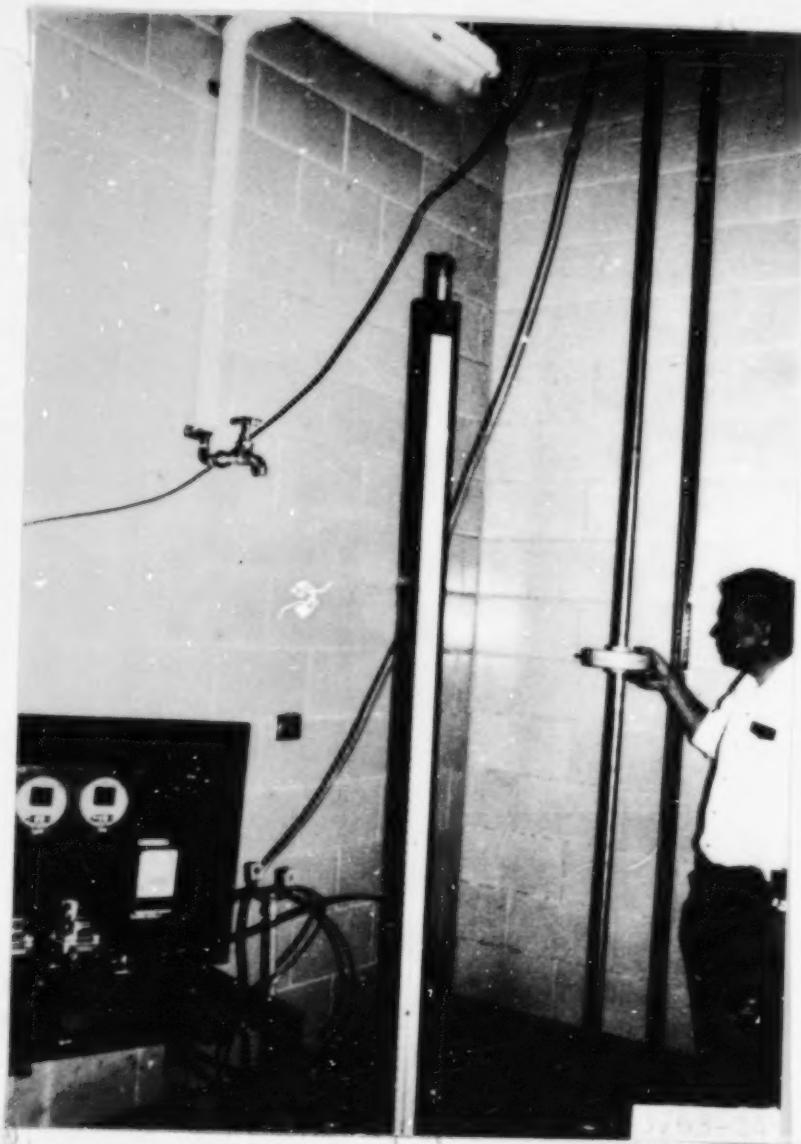


Figure 27. Magnet-Coupled Float Being Checked Out.

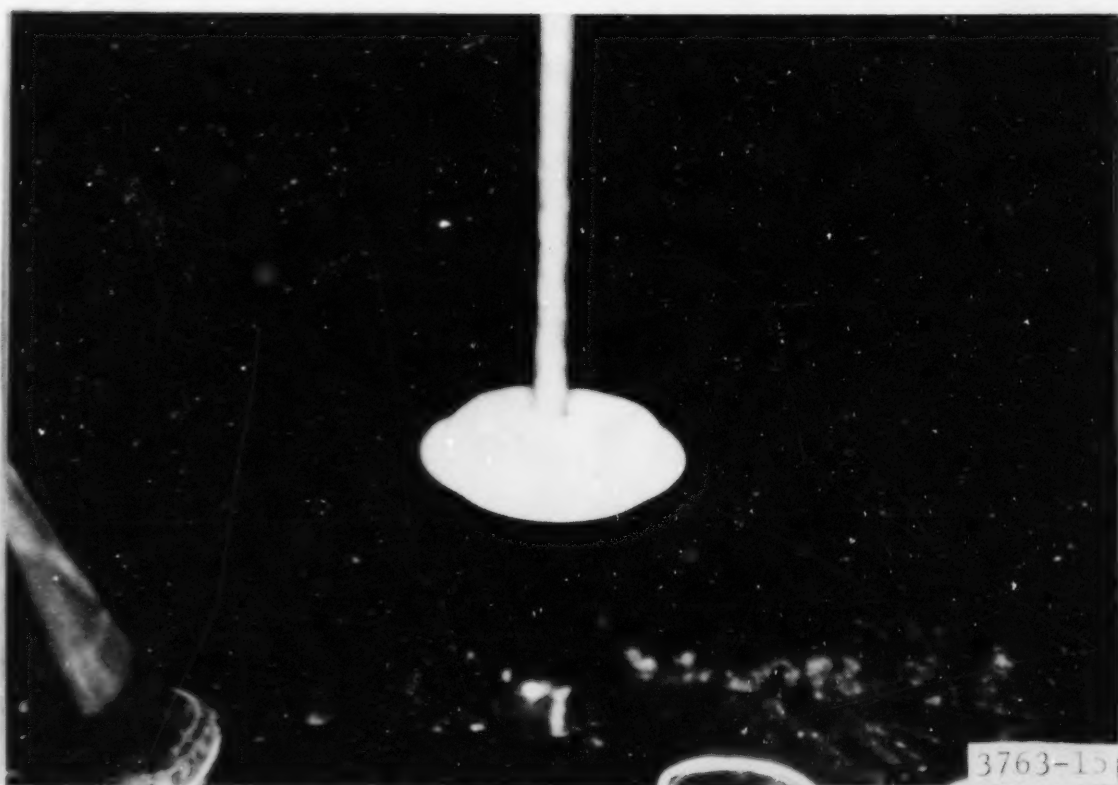


Figure 28. Guide Tube and Float in Position in Solvent Tank.

The problem at the "large New England chemical manufacturer" was one of harsh environment in which sludge would make most mechanical controllers inoperative and would coat pressure transducers and capacitance probes. The corrosive nature of the tank contents dictated the use of inert materials. The Brooks Maglink unit had one moving part in contact with the tank contents, a polypropylene float on a static Teflon-coated guide tube. The explosive environment in which this unit operated precluded electrical controls, so a pneumatic system was used.

APPENDIX A

LIST OF LEVEL CONTROL DEVICES AVAILABLE

Devices are listed by manufacturer and function.

ALL UNITS SURVEYED

NAME	DESCRIPTION			
IMC2151 CONVERT - ILLEGAL DECIMAL CHARACTER P				
MERCROID 612SERIES 101111	221 99938	PRESSURIZED VESSELS		
TRACEBACK ROUTINE CALLED FROM ISN	REG. 14	REG. 15	REG. 0	REG. 1
IBCOM	00198260	001988F8	00000006	00198188
MAIN	000102B8	00180000	F0000074	0018F7F8
ENTRY POINT= 00180000				
STANDARD FIXUP TAKEN , EXECUTION CONTINUING				
1.AMELECTROMSONARTROL XPLOSIONPROOF AVAILABLE				
2.AMIPRODUX M107				
3.ANDONIAN CRYOGENIC LIQUID GASES				
4.AUTOMATIONHLD100 RF				
5.AUTOTRON A744A UP TO 100 MEGOHMS RESIST				
6.AUTOTRON A700				
7.BW CONTROL VARIOUS CONFIGURATIONS				
8.BALL MANUFSWC UPTO1100DEGREES				
9.BALL MANUFSHM SP GRAV PT2 TO 1PT5				
10.BALL MANUFFVM				
11.BALL MANUFFWL				
12.BALL MANUFFVMD				
13.BALL MANUFRVM				
14.BALL MANUFRHM				
15.BALL MANUFSUM				
16.BALL MANUFLWC				
17.BALL MANUFFVM				
18.BALL MANUFFHM				
19.BALL MANUFSVM				
20.BALL MANUFRVM				
21.BINDICATURROTBINDICMANY VARIATIONS				
22.BINDICATORBINDICATMANY VARIATIONS				
23.BINDICATORLIQUIDLEVENON CONTACT DIAPHRAM				
24.BINDICATORCAPLEVEL FOR NON COATING LIQUIDS				
25.BINDICATORPRIMCO IGNORES COATED PROBE RF				
26.BINDICATORLEVELDATA LEVEL MEASURE				
27.BINDICATORGAPPROBE				
28.BINDICATORPROBELEVEL				
29.BRISTOL 108 VARIOUS MODELS				
30.BROOKS INSMO				
31.BROOKS INS5300 MEASUREMENT AND CONTROL				
32.CEIVALCO GAMMO ON-OFF LEVEL OR QUANTITY				
33.CEIVALCO LEVELTRONI				
34.CEIVALCO ELECTROLEV				
35.CEIVALCO ELECTROPRO				
36.CEIVALCO FC				
37.CEIVALCO FLOAT TYPESEVERAL CONFIGURATIONS				
38.COMPAC MAGSWITCH SEVERAL STYLES				
39.COMPU DYNE LC20EX003				
40.CUNNRESEAR FOR ABRASIVE ENVIRONMENT				
41.CONSOLIDAT776 VARIOUS MODELS				
42.CONSOLIDATSOLID STAT				
43.CONSOLIDAT96 VARIOUS MODELS				
44.CONTROLMFG201 UP TO 2HP OUTPUT				
45.CUNTRLOTR205				

46.	CONTRLOTR210	
47.	CONTRLOTR230	CONDUCTIVE LIQ OR POWDER
48.	CONTRLOTR285	
49.	CONTRLOTR270	NO CONTACT
50.	CUSTOMCONT10	BATTERY OR 115VAC
51.	CUSTOMCONT11	BATTERY OR 115VAC
52.	CUSTOMCONT11	
53.	CUSTOMCONT11T	PROBETILT PROBE
54.	DATASONICS100	
55.	DATASONICS500	
56.	DATASONICS800	
57.	DATASONICS1000	NO TANK PENETRATION
58.	DELAVAL LS	SINGLE STATION VARIOUS SIZES
59.	DELAVAL LS3	LO COST
60.	DELAVAL LS800	MULTI STATION
61.	DELAVAL SWITCHKIT	
62.	DELAVAL LS2050	SIDE MOUNT
63.	DELAVAL SONAC	
64.	DELAVAL MODEL4	
65.	DELAVAL	
66.	DREXELBRO0508	
67.	ELECTRCORP1003	
68.	ENDRESSHAUVI8RATROL	
69.	ENDRESSHAUSILOPILOT	WGT ON CABLE
70.	ENDRESSHAUCOMPATROL	
71.	ENDRESSHAUNOVITESTER	
72.	ENDRESSHAUSILOMETER	
73.	ENDRESSHAUMTA280	PT CONTROL USE WITH SILOME
74.	ENDRESSHAU5304	
75.	ENDRESSHAU5284 5287	
76.	ENRAFNONIU	TAPE WITH WEIGHT
77.	FMC 5XLC	
78.	FMC HLC	
79.	FAIRCHILD LLC5025	PREVENT OVERFILL
80.	FAIRCHILD LLC502HLA	HIGH AND LOW LEVEL CONTROL
81.	FAIRCHILD LLC502SA	LOW LEVEL CUT OFF
82.	FISHER 2800-252V	
83.	FISHER 4170-249	EXTERNAL MOUNT
84.	FISHER 241	MAG SW INTERN AND EXTERN
85.	FISHER 220C 274	PREU AND ELECT SWITCHES
86.	FISHER POR1303493WAA	
87.	FISHER POR1302493KBA	
88.	FLOTRONICSL 201	INTERFACE
89.	FLOTRONICSL 400	
90.	FLUIDCUMPO12-64	FLOW SWITCH
91.	FLUID CUMP	
92.	FOXBORO COE170	LIQ LEV OR DENSITY
93.	FOXBORO COE178C	VERT DISPLACE EXTERNAL
94.	FOXBORO CO13F	
95.	FOXBORO CO178C	
96.	FOXBORO CO178S	
97.	FOXBORO CO178T	
98.	FOXBORO CU13R	
99.	FOXBORO COE178S	
100.	FOXBORO COE178T	
101.	FOXBORO COE130MP	
102.	FULLER CO SGSX	
103.	GPE 92020	FLOAT ON CABLE
104.	GPE 92030	FLOAT ON CABLE
105.	HARWIL L20	10 AMP SW FOR DIRECT CONTR
106.	HEALY RUFF2500/260	FLOAT ON SS TAPE
107.	HEALY RUFF 2700	FLOAT ON SS TAPE
108.	HEALY RUFF 2900	MULTIPLE LEVEL
109.	HEALY RUFF 3400	MAG FLOAT SWITCH
110.	HERSEYPRJOLEVELUMETER	BUBBLE TUBE
111.	HERSEYPRUDEA750A	

112.HONEYWELL 29222AN044
 113.HONEYWELL 5292 7C
 114.HONEYWELL 7106
 115.HONEYWELL 29503 4 5
 116.HYDROLEVEL SAFGARD BOILER CONTROL
 117.INTNATULTRIU4ILL INSTALLED ABOVE LIQUID
 118.INSTUMENTS809
 119.INVENTRON USONIC100
 120.INVENTRON USONIC200 INSTALLED AT TANK BOTTOM
 121.INVENTRON PC30 PC15 FOR LIQUIDS ONLY
 122.JACOBYTARBFULLVIEWLEFLOAT IN SIGHTGLASS
 123.JACOBYTARBGUAGEGLASSCLAMP ON GUAGE GLASS
 124.JOBELL A MAG SWITH HOR MOUNT
 125.JOBELL B VERT MOUNT
 126.JOBELL CB EXTERNAL MOUNT
 127.JOBELL KT TWO LEVEL
 128.JOBELL K VERT MOUNT
 129.JOBELL KC VERT MOUNT
 130.JOBELL R EXTERNAL MOUNT
 131.KAYKAYINC SINGLEPOI LIMIT 30FT DIAM TANK
 132.KENC0 PUMPVTO
 133.KENC0 PUMP107C
 134.KENC0 PUMP117C
 135.KENC0 PUMP102C
 136.KIMRAY 12PLE HIGH AND LOW ALARM
 137.KLOCKNERMOS4 SB ST FLOATSW FLOAT BY OTHER
 138.KLOCKNERMOMCSN PRES SW PROBE BY OTHERS
 139.LADISH 30C101-2 FOR CLOSED TANKS
 140.LADISH 30C103-4 FOR OPEN TANKS
 141.LIQLEVLECT265 HOR OR VERT MOUNT CONFIG
 142.LIQLEVLECTL471 HOR OR VERT MOUNT CONFIG
 143.LIQLEVLECT101 102 INTERFACE OR PROPORTIONAL
 144.LIQLEVLECT108
 145.LIQLEVLECT820DEX HI AND LOW CONTROL
 146.LIQLEVLECT6100 MULTI SWITCH
 147.LIQLEVLECT6150
 148.LUMINITE FM SERIES FOOD APPLICATIONS
 149.LUMINITE EH SERIES
 150.MADISONLAB FLOAT SWITCH
 151.MAGNETROL TF
 152.MAGNETROL A DISPLACERS
 153.MAGNETROL CAGE TYPEVARIOUS TEMP AND PRESSURES
 154.MAGNETROL 751
 155.MAGNETROL 2498W BOILER CONTROL
 156.MAGNETROL 402 BOILER CONTROL
 157.MAGNETROL 402X BOILER CONTROL
 158.MAGNETROL 2518W BOILER CONTROL
 159.MAGNETROL TF03 NPT MOUNT
 160.MAGNETROL TF52 FLANGED
 161.MAGNETROL TF201 VARIOUS MODELS
 162.MAGNETROL A103F VARIOUS MODELS
 163.MAGNETROL 291C VARIOUS MODELS
 164.MAGNETROL 249C MIN DIFFERENTIAL VARIETY
 165.MAGNETROL A1501 VARIOUS SERIES
 166.MAGNETROL 751 VARIOUS SERIES
 167.MAJOR 683 LOW PRESSURE
 168.MAJOR 681
 169.MAJOR 686 VARIOUS SWITCH METHODS
 170.MAJOR 610 MAGNETIC SWITCH
 171.MAJOR 687 HIGH PRESSURE
 172.MAJOR 685 LEVEL INDICATOR AND SWITCH
 173.MARTRON 14 16 18 ECONOMICAL SOLID STATE
 174.MASONEILAN12000 TORQUE TUBE DISPLACER
 175.MASTERLEVELTANKMASTERFOR ELEV WATER TANKS
 176.MASTERLEVEHYDROMASTERFOR PRESSURE WATER TANKS
 177.MASTERLEVEBUBBLEMASTERBUBBLE TUBE

178.	MASTERLEVESUMPMAS	
179.	MASTERLEVEFLOATMA	
190.	MASTERLEVELEVELMA	
191.	MASTERLEVEPUMPMAS	
192.	MCDUNNELL	65
193.	MERCROID	SERIES D BOURDON TUBE
194.	MERCROID	SERIES A DIAPHRAM
195.	MERCROID	SERIES C DUAL SWITCHES
196.	MERCROID	40 41 49
197.	MERCROID	SERIES 101RESSURIZED VESSELS
198.	MERCROID	SERIES 201MAG SWITCH
199.	MERCROID	211 221
190.	MERCROID	401
191.	MERCROID	8190 DISPLACER DIRTYVISCOUSTURB
192.	MERCROID	48204821 TORQUE TUBE
193.	METRIITAPE	RESISTANCE TAPE VARIOUSTYP
194.	MILTONROY	
195.	MONITOR	CMB T3PMOUNTLEVEL SOUNDER TAPE
196.	MONITOR	SEVERAL ROTATING PADDLES
197.	MONITOR	SEVERAL
198.	MONITOR	SEVERAL TILT SUSPENDED IN BIN
199.	MOOREPRODU271	
200.	MOOREPRODU19K1	SUBMER SIBLE
201.	MOOREPRODU20	
202.	MOOREPRODU27 AND 25	
203.	NATIONALSO123 133	
204.	NATIONALSO100	SEVERAL TYPES
205.	NATIONALSO501	HI OR LOW LIMITS
206.	NATIONALSO3935	VISCOUS AND AERATED LIQUID
207.	NATIONALSO3105	AERATED LIQUIDS
208.	NATIONALSO3605	CRYOGENIC
209.	NATIONALSO300 400	
210.	NUCLEARRES	UPTO 80 FT DIAM
211.	OIL RIGHT LO LIQ	OIL LOW LEVEL SWITCH
212.	OIL RIGHT HI LO LIQ	OIL HIGH AND LOW LEVEL SW
213.	OHMART	
214.	PAPERMACHININ XNTR	
215.	PENN CONTRF11	SUMP PUMP OR OPEN TANK
216.	PENN CONTRF59	SUMP PUMP
217.	PENN CONTRF63	FOR CLOSED TANKS VAPORTITE
218.	PETROMETER1800	PNEU TO ELECT CONTROLLER
219.	PHOTOBELL	LIGHT TRANSMISSION
220.	PHOTUBELL	LIGHT REFLECTION SURFACE
221.	PHOTOBELL	
222.	PHOTOBELL	
223.	QUALITROL 4360	
224.	QUALITROL 4720	
225.	RANCO E24	
226.	RAYTEONCOMSR50 SR100	CONTINUOUS LEVEL MEASUREME
227.	ROBERTSHAW304	
228.	ROBERTSHAW310	
229.	ROBERTSHAW314	140 POINT
230.	ROBERTSHAW352	CONDUCTIVE LIQUIDS
231.	SCULLY SCULTROL	6CHANNELS PETROCHEM
232.	SENORTECHSP	DIRECT CONTACT
233.	SENORTECHST	NO CONTACT
234.	SENORTECHC5	
235.	SIMMONDS PPOINT LEVE	USED FOR FUEL LEVEL HI LO
236.	SIMMONDS P	VOLUME MEASUREMENT
237.	SKAN-A-MAT	OPAQUE MATL CLEANENVIROMEN
238.	SLOANBROS	FILL VALVE AUTO SHUTOFF
239.	SONICENGINSIGTGLASS	SIGHT GLASS LEVEL SWITCH
240.	SPRAYCO	DEFLECTION OF PROBE
241.	SUARE D	SEVERAL TYPES
242.	STEVENSALATELLEVEL	TILT CONICAL FLOAT
243.	CWSTEVENS 3500	DEPTH MEASURE

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12. WET • FLOAT • ELECT

DESCRIPTION		USE	OP	ACTIVATION	ENV	TEMP RANGE	TEMP (F)	TEMP (C)	COST (\$)	MAX PRESS (PSI)	COMMENTS
1. SONICENGIN	SIGHTGLASS	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SIGHT GLASS LEVEL SWITCH
2. VARECINC	2800	WET	FLOAT	ELEC		UNKNOWN	150-164	UNKNOWN	1500-1999		
3. MARHIL	L20	WET	FLOAT	ELEC		UNKNOWN	165-179	UNKNOWN	<500		10 AMP SW FOR DIRECT CONTH
4. JACOBYTARB	FULLVIEWER	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500		FLOAT IN SIGHTGLASS
5. MADISONLAB		WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	<75	<500		FLOAT SWITCH
6. COMPAC		WET	FLOAT	ELEC	X-PRF	-41-60	225-274	75-124	500-999		MAGSWITCH SEVERAL STYLES
7. FISHER	2800-252V	WET	FLOAT	ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	1000-1499		
8. MERCOID	40 41 49	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
9. MERCOID	SERIES 101	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
10. MERCOID	SERIES 201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499		RESSURIZED VESSELS
11. MERCOID	211 221	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499		MAGSWITCH
12. MERCOID	401	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499		
13. MERCOID	8190	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500		
14. MERCOID	40204821	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		DISPLACER DIRTY VISCOSTURN
15. MCDONNELL	65	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500		TORQUE TUBE
16. DELAVAL	LS	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	75-124	<500		
17. DELAVAL	LS3	WET	FLOAT	ELEC		0 -20	180-199	75-124	UNKNOWN		SINGLE STATION VARIOUS SIZES
18. DELAVAL	LS800	WET	FLOAT	ELEC		-61-80	150-164	125-249	UNKNOWN		LC COST
19. DELAVAL	SWITCHKIT	WET	FLOAT	ELEC		UNKNOWN	275-349	75-124	500-999		MULTI STATION
20. DELAVAL	LS2050	WET	FLOAT	ELEC	X-PRF	-21-40	275-349	75-124	500-999		SIDE MOUNT
21. CONTROLMFG	201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	200-224	75-124	<500		UP TO 2HP OUTPUT
22. HUOREPRODU	271	WET	FLOAT	ELEC	X-PRF	UNKNOWN	225-274	125-249	500-999		
23. QUALITROL	4360	WET	FLOAT	ELEC	X-PRF	-21-40	225-274	UNKNOWN	500-999		
24. QUALITROL	4720	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500		
25. LIQLEVLECT	L471	WET	FLOAT	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN		HOR OR VERT MOUNT CONFIG
26. LIQLEVLECT	108	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500		
27. LIQLEVLECT	8200EX	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500		HI AND LOW CONTROL
28. FUXBORO CO	E176C	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	2500-2999		VERTU DISPLACE EXTERNAL
29. FUXBORO CO	E176S	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500		
30. FUXBORO CO	E178T	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500		
31. MERSEYPROO	EAT50A	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
32. OIL RIGHT	LQ L1Q	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500		OIL LOW LEVEL SWITCH
33. OIL RIGHT	HI LQ L1Q	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500		OIL HIGH AND LOW LEVEL SW
34. KLUCKNERMO	SW 58 ST	WET	FLOAT	ELEC	OTHER	0 -20	150-164	<75	UNKNOWN		FLOATSW FLOAT BY UTH
35. MAGNETROL	CAGE TYPE	WET	FLOAT	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500		VARIOUS TEMP AND PRESSURES
36. GPE	92020	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500		FLOAT ON CABLE
37. GPE	92030	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500		FLOAT ON CABLE
38. MAJOR	683	WET	FLOAT	ELEC		UNKNOWN	225-274	UNKNOWN	UNKNOWN		LOW PRESSURE
39. MAJOR	610	WET	FLOAT	ELEC	X-PRF	0 -20	UNKNOWN	UNKNOWN	UNKNOWN		MAGNETIC SWITCH
40. MAJOR	687	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	1000-1499		HIGH PRESSURE
41. VAREC	2800	WET	FLOAT	ELEC	X-PRF	-41-60	350 UP	UNKNOWN	UNKNOWN		
42. PENN CONTR	F11	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		SUMP PUMP OR OPEN TANK
43. PENN CONTR	F59	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		SUMP PUMP
44. PENN CONTR	F63	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		FOR CLOSED TANKS VARIOUS
45. SQUARE D		WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN		SEVERAL TYPES
46. MAGNETROL	2490W	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		BOILER CONTROL
47. MAGNETROL	402	WET	FLOAT	ELEC		0 -20	350 UP	UNKNOWN	1500-1999		BOILER CONTROL
48. MAGNETROL	402X	WET	FLOAT	ELEC		0 -20	350 UP	UNKNOWN	2000-2499		BOILER CONTROL
49. MAGNETROL	2510W	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	1500-1999		BOILER CONTROL
50. MAGNETROL	TF63	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500		UP T MOUNT
51. MAGNETROL	TF52	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500		FLANGED
52. MAGNETROL	TF201	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		VARIOUS MODELS
53. MAGNETROL	A103F	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		VARIOUS MODELS
54. MAGNETROL	291C	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		VARIOUS MODELS

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244. TARRICONE	SLD	
245. TAYLOR	300T	VARIOUS PRESSURE RANGES
246. TAYLOR	320T	DIFF PRESS
247. TAYLOR	310T	
248. TAYLOR	340T	
249. TAYLOR	200T	
250. TAYLOR	1300T	TANK AND REMOTE MOUNTED
251. TAYLOR	1320T	
252. TAYLOR	1310T	
253. TAYLOR	1340T	
254. TRANS	SCNIP5202	SERIES
255. VAREC INC	2800	
256. VAREC	OMNITROL	
257. VAREC	2800	
258. VEZAINO	SL AQUISWITE	
259. WARRICK		NOT FOR ALL AQUEOUS SOLUTI
260. WESTINGHO		
261. WHITMAN	5103	
262. WESMAR	SLM SERIES	MANY CONFIG 1FT TO 10FT
263. WESMAR	LM SERIES	MANY CONFIG 2FT TO 100FT
264. YARWAY		CONTINUOUS LEVEL READ OUT

55. MAGNETROL	249C	WET	FLOAT ELEC	UNKNOWN	350 UP	UNKNOWN	<500	4IN DIFFERENTIAL VARIETY
56. CONSOLIDAT	77G	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
57. CONSOLIDAT	9G	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
58. MASTERLEVE	FLOATMASTE	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	125-249	UNKNOWN
59. MASTERLEVE	LEVELMASTE	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	75-124	UNKNOWN
60. MASTERLEVE	PUMPMASTER	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	500-999	UNKNOWN	UNKNOWN
61. JOBELL	A	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500
62. JOBELL	B	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500
63. JOBELL	KT	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500
64. JOBELL	K	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500
65. JOBELL	R	WET	FLOAT ELEC	X-PRF	UNKNOWN	225-274	250-499	<500
66. FISHER	241	WET	FLOAT ELEC	X-PRF	UNKNOWN	275-349	UNKNOWN	500-999
67. HEALY RUFF	2500/260	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
68. HEALY RUFF	2700	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
69. HEALY RUFF	2900	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
70. HEALY RUFF	3400	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN

EPA FAIL SAFE

16. WET • FLOAT • ELECT AND OR PNEU

DESCRIPTION	USE	OP	ACTIVATION	ENVR	L TMP (F)	H TMP (F)	COST (\$)	MAX PRESS (PSI)	COMMENTS
1. CEIVALCO	FLOAT TYPE	WET	FLOAT EL/PN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SEVERAL CONFIGURATIONS
2. MASONERIAN	12000	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	2000-2499	TJRQE TUBE DISPLACER
3. MOOREPRUDU	27 AND 25	WET	FLOAT EL/PN	X-PRF	UNKNOWN	275-349	UNKNOWN	1000-1499	
4. LIQLEVLECT	265	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	4000 UP	HJR OR VERT MOUNT CONFIG
5. LIQLEVLECT	101 102	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	4000 UP	INTERFACE OR PROPORTIONAL
6. BALL MANUF	SWC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	2500-2999	UP TO 110 DEGREES
7. BALL MANUF	SHM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	1500-1999	SP GRAV PT2 TO 1PT5
8. BALL MANUF	FVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
9. BALL MANUF	FVL	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
10. BALL MANUF	FVMD	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
11. BALL MANUF	RVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	UNKNOWN	
12. BALL MANUF	RHM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	UNKNOWN	
13. BALL MANUF	SUM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	1500-1999	
14. BALL MANUF	LWC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN	
15. BALL MANUF	FVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
16. BALL MANUF	FHM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
17. BALL MANUF	SYM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN	
18. BALL MANUF	RVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	75-124	UNKNOWN	
19. MAGNETROL	TF	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	
20. MAGNETROL	A	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	
21. MAGNETROL	751	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	500-999	DISPLACERS
22. MAJOR	681	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	
23. MAJOR	686	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	
24. VAREC	UMNITROL	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	VARIOUS SWITCH METHODS
25. BAKJOKS	INS 5300	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	1000-1499	
26. MAGNETROL	751	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	500-999	MEASUREMENT AND CONTROL
27. JOBELL	CB	WET	FLOAT EL/PN	X-PRF	UNKNOWN	150-164	125-249	2000-2499	VARIOUS SERIES
28. JOBELL	KC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	150-164	125-249	500-999	EXTERNAL MOUNT
								<500	VERT MOUNT

EPA FAIL SAFE

15. WET • FLOAT • PNEU

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.LADISH 30C101-2	WET	FLOAT	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FJR CLOSED TANKS
2.LADISH 30C103-4	WET	FLOAT	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FJR OPEN TANKS
3.KIMRAY 12PLE	WET	FLOAT	PNEU	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	HIGH AND LOW ALARM
4.FOXBORO CO 178C	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	500-999	
5.FOXBORO CO 178S	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
6.FOXBORO CO 178T	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
7.HONEYWELL 7106	WET	FLOAT	PNEU		0 -20	350 UP	UNKNOWN	4000 UP	
8.FISHER 4170-249	WET	FLOAT	PNEU		-21-40	150-164	UNKNOWN	2000-2499	EXTERNAL MOUNT

16. WET • FLOAT • MECH

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.BRISTOL 1KC500 15	WET	FLOAT	MECH		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES
2.FISHER 220C 274	WET	FLOAT	MECH		UNKNOWN	UNKNOWN	UNKNOWN	500-999	PNEU AND ELECT SWITCHES

18. WET • US OR RF • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.TARRICONEF SLLD	WET	US,RF	ELEC	X-PRF	-41-80	225-274	UNKNOWN	2500-2999	
2.VEZAINDUSTR LIQUISWITC	WET	US,RF	ELEC	X-PRF	0 -20	165-179	125-249	500-999	
3.INTNATULTR IU4ILL	WET	US,RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	INSTALLED ABOVE LIQUID
4.DELAVAN MUDEL4	WET	US,RF	ELEC	X-PRF	-41-80	225-274	UNKNOWN	3000-3999	
5.UATASCNICS 100	WET	US,RF	ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	
6.UATASCNICS 1000	WET	US,RF	ELEC	WTHR	0 -20	150-164	500-999	UNKNOWN	
7.NATIONALSG 501	WET	US,RF	ELEC	X-PRF	-21-40	225-274	75-124	500-999	NJ TANK PENETRATION
8.NATIONALSJ 3935	WET	US,RF	ELEC	X-PRF	-21-40	275-349	UNKNOWN	500-999	HI OR LOW LIMITS
9.NATIONALSU 310S	WET	US,RF	ELEC		-101-150	225-274	125-249	<500	VISCOUS AND AERATED LIQUID
10.NATIONALSU 360S	WET	US,RF	ELEC		<-150	225-274	125-249	2000-2499	AERATED LIQUIDS
11.NATIONALSU 300 400	WET	US,RF	ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	CRYOGENIC
12.C STEVENS 3500	WET	US,RF	ELEC		-21-40	<150	500-999	UNKNOWN	DEPTH MEASURE
13.CONTROLOTR 285	WET	US,RF	ELEC		-21-40	225-274	UNKNOWN	1500-1999	
14.CONTROLOTR 270	WET	US,RF	ELEC	X-PRF	-21-40	225-274	UNKNOWN	4000 UP	NJ CONTACT
15.BINDICATOR GAPPROBE	WET	US,RF	ELEC		-21-40	150-164	UNKNOWN	<500	
16.ENDRESSHAU 5284 5287	WET	US,RF	ELEC		-21-40	<150	UNKNOWN	UNKNOWN	

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6. WET • PRESSURE • ELEC

DESCRIPTION		USE	OP	ACTIVATION	ENVR	TEMP RANGE		L T(MP(F))	H T(MP(F))	COST(\$)	MAX PRESS(PSI)	COMMENTS
1. MERCID	SERIES D	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	4000	UP	BOURDON TUBE
2. MERCID	SERIES A	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	<500		DIAPHRAM
3. MERCID	SERIES C	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	<500		DUAL SWITCHES
4. WHITMAN	5103	WET	PRESS	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
5. KENCO PUMP	VTO	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
6. KENCO PUMP	107C	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
7. KENCO PUMP	117C	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
8. KENCO PUMP	102C	WET	PRESS	ELEC		UNKNOWN	150-164	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
9. LIQLEVLECT	6100	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		MULTI SWITCH
10. LIQLEVLECT	6150	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
11. FOXBORO CO	E170	WET	PRESS	ELEC	X-PRF	UNKNOWN	350	UP	UNKNOWN	<500		LIQ LEV OR DENSITY
12. FOXBORO CO	13F	WET	PRESS	ELEC		UNKNOWN	350	UP	UNKNOWN	<500		UNKNOWN
13. FOXBORO CO	E130MP	WET	PRESS	ELEC	X-PRF	0 -20	165-179	UNKNOWN	UNKNOWN	<500		UNKNOWN
14. INDICATOR	LIQUIDLEVE	WET	PRESS	ELEC	X-PRF	UNKNOWN	150-164	UNKNOWN	UNKNOWN	UNKNOWN		NON CONTACT DIAPHRAM
15. KLOCKNERMO	MCSM	WET	PRESS	ELEC		UNKNOWN	150-164	<75	UNKNOWN	UNKNOWN		PRES SW PROBE BY OTHERS
16. HONEYWELL	5292 7C	WET	PRESS	ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
17. YARWAY		WET	PRESS	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	3000-3999		CONTINUOUS LEVEL READ OUT
18. FISHER PQR	1302493K8A	WET	PRESS	ELEC		-21-40	225-274	UNKNOWN	UNKNOWN	<500		UNKNOWN
19. TRANS SONI	PS.02	WET	PRESS	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		SERIES
20. CONSOLIDAT	SOLID STAT	WET	PRESS	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		UNKNOWN
21. TAYLOR	1300T	WET	PRESS	ELEC	X-PRF	-21-40	180-199	500-999	4000	UP		TANK AND REMOTE MOUNTED
22. TAYLOR	1320T	WET	PRESS	ELEC	X-PRF	-21-40	180-199	500-999	1500-1999			1500-1999
23. TAYLOR	1310T	WET	PRESS	ELEC	X-PRF	-21-40	180-199	500-999	500-999			500-999
24. TAYLOR	1360T	WET	PRESS	ELEC	X-PRF	-21-40	180-199	500-999	<500			<500
25. MASTERLEVE	TANKMASTER	WET	PRESS	ELEC	WATER	UNKNOWN	UNKNOWN	500-999	UNKNOWN	UNKNOWN		FJR ELEV WATER TANKS
26. MASTERLEVE	HYDROMASTE	WET	PRESS	ELEC		UNKNOWN	UNKNOWN	1000-1499	UNKNOWN	UNKNOWN		FJR PRESSURE WATER TANKS

3. WET • PRESSURE • ELEC AND OR PNEU

TEMP RANGE												
DESCRIPTION	USE	OP	ACTIVATION	ENVR	L T(MP(F))	H T(MP(F))	COST(\$)	MAX PRESS(PSI)	COMMENTS			
1. CEIVALCO	PC	WET	PRESS	EL/PN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN				
2. WESTINGHOE		WET	PRESS	EL/PN	X-PRF	225-274	UNKNOWN	UNKNOWN	1500-1999			
3. MAJOR	685	WET	PRESS	EL/PN	X-PRF	-41-60	200-224	UNKNOWN	UNKNOWN	LEVEL INDICATOR AND SWIT.		
4. BRISTOL	1G50015	WET	PRESS	EL/PN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES BUBBLER TYPE		

EPA FAIL SAFE

2. WET * PRESSURE * PNEU

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.PAPERMACHI MIN XMTR	WET	PRESS	PNEU		UNKNOWN	180-199	75-124	<500	
2.FAIRCHILD LLC502S	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	PREVENT OVERFILL
3.FAIRCHILD LLC502HLA	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	HIGH AND LOW LEVEL CONTROL
4.FAIRCHILD LLC502SA	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LOW LEVEL CUT OFF
5.PETROMETER 1800	WET	PRESS	PNEU	W/HER	UNKNOWN	UNKNOWN	75-124	UNKNOWN	PNEU TO ELECT CONTROLLER
6.MOOREPRODU 19K1	WET	PRESS	PNEU		-21-40	275-349	UNKNOWN	UNKNOWN	SUBMERSIBLE
7.FOXBORO CO 13R	WET	PRESS	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
8.HERSEYPROD LEVELOMETE	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BUBBLE TUBE
9.HONEYWELL 29503 4 5	WET	PRESS	PNEU	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	
10.FISHER POR 1303493WAA	WET	PRESS	PNEU		-21-40	225-274	UNKNOWN	<500	
11.TAYLOR 300T	WET	PRESS	PNEU	X-PRF	-21-40	180-199	500-999	<500	VARIOUS PRESSURE RANGES
12.TAYLOR 320T	WET	PRESS	PNEU	X-PRF	-21-40	180-199	500-999	1500-1999	DIFF PRESS
13.TAYLOR 310T	WET	PRESS	PNEU	X-PRF	-21-40	165-179	500-999	<500	
14.TAYLOR 360T	WET	PRESS	PNEU	X-PRF	0 -20	150-164	500-999	<500	
15.TAYLOR 200T	WET	PRESS	PNEU	X-PRF	0 -20	165-179	125-249	<500	
16.MASTERLEVE BUBBLEMAST	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	500-999	UNKNOWN	BUBBLE TUBE
17.MASTERLEVE SUMPMASER	WET	PRESS	PNEU	W/HER	UNKNOWN	UNKNOWN	250-499	UNKNOWN	

1. WET * PRESSURE * HYDR

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.HONEYWELL 29222AND44	WET	PRESS	HYDR	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	

7. WET * PRESSURE * MECH

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.BRISTOL 108	WET	PRESS	MECH		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS

5. WET * CAPACITANCE * ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.JACOBYTARB GUAGEGLASS	WET	CAP	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CLAMP ON GUAGE GLASS
2.AHIPRODUX M107	WET	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
3.SIMMONDS P	WET	CAP	ELEC		UNKNOWN	350 UP	UNKNOWN	UNKNOWN	VOLUME MEASUREMENT

EPA FAIL SAFE

11. WET • ELECT COND • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1.LUMINITE FM SERIES	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOOD APPLICATIONS
2.LUMINITE EH SERIES	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
3.PHOTOBELL	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4.ROBERTSHAW 352	WET	ELEC	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN	CONDUCTIVE LIQUIDS
5.CEIVALCO LEVELTRON	WET	ELEC	ELEC	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
6.RANCO E24	WET	ELEC	ELEC		-21-40	<150	UNKNOWN	UNKNOWN	UNKNOWN	
7.AUTOTRON A744A	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	UNKNOWN	UP TO 100 MEGOHMS RESIST
8.ELECTRCCRP 1003	WET	ELEC	ELEC	W/HER	0 -20	<150	75-124	UNKNOWN	UNKNOWN	
9.CONTROLOTR 230	WET	ELEC	ELEC		-21-40	200-224	UNKNOWN	1500-1999	UNKNOWN	CONDUCTIVE LIQ OR POWDER
10.MARTRON 14 16 18	WET	ELEC	ELEC		0 -20	150-164	<75	UNKNOWN	UNKNOWN	ECONOMICAL SOLID STATE
11.BINDICATOR PROBE LEVEL	WET	ELEC	ELEC	W/HER	-21-40	150-164	UNKNOWN	2000-2499	UNKNOWN	
12.ENDRESSHAU 5304	WET	ELEC	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	UNKNOWN	
13.BW CONTROL	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	75-124	UNKNOWN	UNKNOWN	VARIOUS CONFIGURATIONS
14.WARRICK	WET	ELEC	ELEC		0 -20	<150	UNKNOWN	<500	UNKNOWN	NOT FOR ALL AQUEOUS SOLUTI
15.HYDROLEVEL SAFGARD	WET	ELEC	ELEC		UNKNOWN	UNKNOWN		<500	UNKNOWN	BOILER CONTROL

11. WET • TEMP CHANGE • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1.FLUIDCOMPO 12-64	WET	TEMP	ELEC		-61-80	150-164	UNKNOWN	2500-2999	UNKNOWN	FLOW SWITCH
2.SCULLY SCULTRON	WET	TEMP	ELEC	X-PRF	-21-40	<150	1000-1499	UNKNOWN	6 CHANNELS	PETROCHEM
3.FLUID COMP	WET	TEMP	ELEC		-81-100	350 UP	UNKNOWN	3000-3999	UNKNOWN	
4.SIMMONDS P POINT LEVE	WET	TEMP	ELEC		-61-80	150-164	UNKNOWN	UNKNOWN	UNKNOWN	USED FOR FUEL LEVEL HI LI

5. WET • GAMMA RAY- LIGHT • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1.PHOTOBELL	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LIGHT TRANSMISSION
2.PHOTOBELL	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LIGHT REFLECTION SURFACE

EPA FAIL SAFE

17. W&D • FLOAT • ELEC

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.MONITOR CMB	W&D	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TJPMOUNTLEVEL SOUNDER TAPE
2.ENRAFNONIU	W&D	FLOAT	ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	UNKNOWN	TAPE WITH WEIGHT
3.STEVENSADA TELLEVEL	W&D	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TILT CONICAL FLOAT

3. W&D • FLOAT • ELECT AND OR PNEU

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.MAGNETROL A1501	W&D	FLOAT	ELZPN	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	4000 UP	VARIOUS SERIES

5. W&D • US OR RF • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.AMELECTRON SONARTRUL	W&D	US,RF	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	XPLSIONPROOF AVAILABLE
2.RAYTEUNCOM SR50 SR100	W&D	US,RF	ELEC	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	CONTINUOUS LEVEL MEASURE
3.INVENTRON USONIC100	W&D	US,RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4.PHOTOBELL	W&D	US,RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
5.DELAVAN SONAC	W&D	US,RF	ELEC	X-PRF	-41-60	225-274	UNKNOWN	3000-3999	
6.DATASONICS 500	W&D	US,RF	ELEC	X-PRF	0 -20	<150	1000-1499	UNKNOWN	
7.DATASONICS 800	W&D	US,RF	ELEC	X-PRF	0 -20	150-164	500-999	UNKNOWN	
8.AUTOMATION HLD100	W&D	US,RF	ELEC	X-PRF	-21-40	<150	UNKNOWN	UNKNOWN	RF
9.WESMAR SLM SERIES	W&D	US,RF	ELEC	X-PRF	-21-40	180-199	UNKNOWN	UNKNOWN	ANY CONFIG 1FT TO 10FT
10.SENSORTECH SP	W&D	US,RF	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	DIRECT CONTACT
11.SENSORTECH ST	W&D	US,RF	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	NO CONTACT
12.INDICATOR PRIMCO	W&D	US,RF	ELEC	X-PRF	-21-40	150-164	UNKNOWN	1000-1499	IGNIKES COATED PROBE RF
13.INDICATOR LEVELDATA	W&D	US,RF	ELEC	X-PRF	0 -20	UNKNOWN	UNKNOWN	UNKNOWN	LEVEL MEASURE
14.INVENTRON PC30	W&D	US,RF	ELEC	X-PRF	-41-60	200-224	UNKNOWN	<500	PC15 FOR LIQUIDS ONLY

11. W&D • PRESSURE • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.METRITAPE	W&D	PRESS	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	RESISTANCE TAPE VARIOUSTYP

EPA FAIL SAFE

17. WGD • CAPACITANCE • ELECT

DESCRIPTION	USE	GP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(Psi)	COMMENTS
					L Tmp(F)	H Tmp(F)			
1.COMPUDYNE LC20EX000	WGD	CAP	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	
2.INSTRUMENTS 809	WGD	CAP	ELEC	X-PRF	0 -20	150-164	500-999	500-999	
3.FLOTROTCES L201	WGD	CAP	ELEC	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	INTERFACE
4.ROBERTSHAW 304	WGD	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	
5.ROBERTSHAW 310	WGD	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	
6.ROBERTSHAW 314	WGD	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	TWO POINT
7.CUSTOMCONT 10	WGD	CAP	ELEC	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	BATTERY OR 115VAC
8.CUSTOMCONT 11	WGD	CAP	ELEC	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	BATTERY OR 115VAC
9.CUSTOMCONT 11	WGD	CAP	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
10.CEIVALCO ELECTROLEV	WGD	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
11.CEIVALCO ELECTROPRO	WGD	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
12.CONTROLOTR 205	WGD	CAP	ELEC	X-PRF	-61-80	225-274	UNKNOWN	1500-1999	
13.CONTROLOTR 210	WGD	CAP	ELEC		-61-80	200-224	UNKNOWN	500-999	
14.BINDICATOR CAPLEVEL	WGD	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	FOR NON COATING LIQUIDS
15.ENDRESSHAU COMPATROL	WGD	CAP	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
16.ENDRESSHAU NOVITESTER	WGD	CAP	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
17.ENDRESSHAU SILOMETER	WGD	CAP	ELEC		0 -20	200-224	UNKNOWN	UNKNOWN	
18.ENDRESSHAU HTA280	WGD	CAP	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	PT CONTROL USE WITH SILOM

17. WGD • GAMMA RAY-LIGHT • ELECT

DESCRIPTION	USE	GP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(Psi)	COMMENTS
					L Tmp(F)	H Tmp(F)			
1.KAYRAYINC SINGLEPOI	WGD	E-RAD	ELEC	WHER	0 -20		UNKNOWN	4000 UP	LIMIT 30FT DIAM TANK
2.NUCLEARRES	WGD	E-RAD	ELEC	X-PRF	-21-40	150-164	UNKNOWN	4000 UP	UP TO 80 FT DIAM
3.CEIVALCO GAMMO	WGD	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ON-OFF LEVEL OR QUANTITY
4.OHMART	WGD	E-RAD	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	

EPA FAIL SAFE

17. DRY • FLOAT • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.CUSTOMCONT TILT PROBE	DRY	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TILT PROBE
2.MONITOR SEVERAL	DRY	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	UNKNOWN	UNKNOWN	TILT SUSPENDED IN dIN
3.SPRAYCO	DRY	FLOAT ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	UNKNOWN	DEFLECTION OF PRGGE
4.ENDRESSHAU SILOPILOT	DRY	FLOAT ELEC		0	-20	<150	UNKNOWN	UNKNOWN	WGT ON CABLE

18. DRY • FLOAT • MECH

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.WESMAR LM SERIESO	DRY	FLOAT MECH	DUST	-41-60	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MANY CONFIG 2FT TO 100FT

5. DRY • US OR RF • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.DELAVAN	DRY	US,RF ELEC	X-PRF	0	-20	150-164	UNKNOWN	UNKNOWN	
2.NATIONALSO 123 133	DRY	US,RF ELEC	X-PRF	-21-40	200-224	75-124	<500		
3.NATIONALSO 100	DRY	US,RF ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	UNKNOWN	SEVERAL TYPES

11. DRY • PRESSURE • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.JEFFREY 496	DRY	PRESS ELEC	DUST	UNKNOWN	200-224	UNKNOWN	UNKNOWN	UNKNOWN	BULK UP TO 100LBS PERCU FT
2.FMC HLS	DRY	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
3.MONITOR SEVERAL	DRY	PRESS ELEC	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4.BINDICATOR BINDICATAT	DRY	PRESS ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MANY VARIATIONS

15. DRY • PRESSURE • ELEC AND OR PNEU

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.BROOKS INS MD	DRY	PRESS EL/PN		UNKNOWN	180-199	UNKNOWN	<500		

EPA FAIL SAFE

11. DRY • PADDLE OR PLATE • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.FLOTRONICS L400	DRY	PDLE	ELEC	X-PRF	-21-40	<150	UNKNOWN	UNKNOWN	
2.FMC 5XLC	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ROTATING PADDLES
3.MONITOR SEVERAL	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4.FULLER CO SGSX	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN	
5.SENSORTech C5	DRY	PDLE	ELEC	-	0 -20	150-164	UNKNOWN	UNKNOWN	MANY VARIATIONS
6.BINDICATOR ROTOBINDIC	DRY	PDLE	ELEC	X-PRF	UNKNOWN	200-224	UNKNOWN	UNKNOWN	
7.ENDRESSHAU VIBRATROL	DRY	PDLE	ELEC	X-PRF	0 -20	<150	UNKNOWN	<500	

17. DRY • GAMMA RAY-LIGHT • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.AUTOTRON A700	DRY	E-RAD	ELEC		UNKNOWN	<150	75-124	UNKNOWN	

16. DRY • UNKNOWN • UNK

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.CONNRESEAR	DRY	UNK			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOR ABRASIVE ENVIRONMENT

17. CRY • TEMP CHANGE • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.ANDONIAN	CRY	TEMP	ELEC		UNKNOWN	UNKNOWN	250-499	UNKNOWN	CRYOGENIC LIQUID GASES

16. INF • PRESSURE • ELECT

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.MILTONROY	ITF	PRESS	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	

EPA FAIL SAFE

8. ELECT ACTIVATION - FLOAT OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVIR	TEMP RANGE	TEMP (F)	TEMP (F)	COST (\$)	MAX PRESS (PSI)	COMMENTS
1. SONICENGIN	SIGTGLASS	WET	FLOAT	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SIGHT GLASS LEVEL SWITCH
2. VARECINC	2800	WET	FLOAT	ELEC	UNKNOWN	150-164	UNKNOWN	1500-1999	UNKNOWN	
3. HARWIL	L20	WET	FLOAT	ELEC	UNKNOWN	165-179	UNKNOWN	<500	UNKNOWN	10 AMP SW FOR DIRECT CONTR
4. JACOBYTARB	FULLVIEW	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT IN SIGHTGLASS
5. MADISONLAB		WET	FLOAT	ELEC	UNKNOWN	UNKNOWN	<75	<500	UNKNOWN	FLOAT SWITCH
6. COMPAC		WET	FLOAT	ELEC	X-PRF	-41-60	225-274	75-124	500-999	MAGSWITCH SEVERAL STYLES
7. CUSTOMCONT	TILT PROBE	DRY	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TILT PROBE
8. FISHER	2800-252V	WET	FLOAT	ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	1000-1499	
9. MERCROID	40 41 49	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
10. MERCROID	SERIES 101	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	RESSURIZED VESSELS
11. MERCROID	SERIES 201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	MAGSWITCH
12. MERCROID	211 221	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	
13. MERCROID	401	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
14. MERCROID	8190	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	DISPLACER DIRTY/Viscous/Turb
15. MERCROID	40204821	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	TORQUE TUBE
16. MCDONNELL	65	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
17. MONITOR	CM8	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
18. MONITOR	SEVERAL	DRY	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TJPMOUNTLEVEL SOUNDER TAPE
19. DELAVAL	LS	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	75-124	<500	TILT SUSPENDED IN BIN
20. DELAVAL	LS3	WET	FLOAT	ELEC		0 -20	180-199	75-124	UNKNOWN	SINGLESTATION VARIOUSIZES
21. DELAVAL	LS800	WET	FLOAT	ELEC		-61-80	150-164	125-249	UNKNOWN	LO COST
22. DELAVAL	SWITCHKIT	WET	FLOAT	ELEC		UNKNOWN	275-349	75-124	500-999	MULTI STATION
23. DELAVAL	LS2050	WET	FLOAT	ELEC	X-PRF	-21-40	275-349	75-124	500-999	
24. ENRAFNUMTU		WET	FLOAT	ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	UNKNOWN	SIDE MOUNT
25. SPRAYCO		DRY	FLOAT	ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	TAPE WITH WEIGHT
26. STEVENSADA	TELLEVEL	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	DEFLECTION OF PROBE
27. CONTROLMFG	201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	200-224	75-124	<500	TILT CONICAL FLOAT
28. MOOREPRDU	271	WET	FLOAT	ELEC	X-PRF	UNKNOWN	225-274	125-249	500-999	UP TO 2HP OUTPUT
29. QUALITROL	4360	WET	FLOAT	ELEC	X-PRF	-21-40	225-274	UNKNOWN	500-999	
30. QUALITROL	4720	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	
31. LIQLEVLECT	L471	WET	FLOAT	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	HOR OR VERT MOUNT CONFIG
32. LIQLEVLECT	108	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
33. LIQLEVLECT	8200EX	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
34. FOXBORO CO	E178C	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	2500-2999	HI AND LOW CONTROL
35. FOXBORO CO	E178S	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500	VERTDISPLACE EXTERNAL
36. FOXBORO CO	E178T	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500	
37. HERSEYPROD	EA750A	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
38. ENDRESSHAU	SILOPILOT	DRY	FLOAT	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	WGT ON CABLE
39. OIL RIGHT	LO LIQ	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500	OIL LOW LEVEL SWITCH
40. OIL RIGHT	HI LO LIQ	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500	OIL HIGH AND LOW LEVEL SW
41. KLOCKNERMO	SW SB ST	WET	FLOAT	ELEC	WHER	0 -20	150-164	<75	UNKNOWN	FLOAT SW FLOAT BY UTILITY
42. MAGNETROL	CAGE TYPE	WET	FLOAT	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	VARIOUS TEMP AND PRESSURES
43. GPE	92020	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT ON CABLE
44. GPE	92030	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT ON CABLE
45. MAJOR	683	WET	FLOAT	ELEC	X-PRF	0 -20	225-274	UNKNOWN	UNKNOWN	FLOAT ON CABLE
46. MAJOR	610	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LOW PRESSURE
47. MAJOR	687	WET	FLOAT	ELEC	X-PRF	-41-60	350 UP	UNKNOWN	UNKNOWN	MAGNETIC SWITCH
48. VAREC	2800	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	HIGH PRESSURE
49. PENN CONTR	F11	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
50. PENN CONTR	F59	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SUMP PUMP OR OPEN TANK
51. PENN CONTR	F63	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SUMP PUMP
52. SQUARE D		WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN	FOR CLOSED TANKS VAPORITIZ
53. MAGNETROL	2498W	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SEVERAL TYPES
54. MAGNETROL	402	WET	FLOAT	ELEC		0 -20	350 UP	UNKNOWN	1500-1999	BJILER CONTROL

55. MAGNETROL	402X	WET	FLOAT ELEC	3 -20	350 UP	UNKNOWN	2000-2499	BOILER CONTROL	
56. MAGNETROL	251BW	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	1500-1999	BOILER CONTROL	
57. MAGNETROL	TF63	WET	FLOAT ELEC	UNKNOWN	350 UP	UNKNOWN	<500	NPT MOUNT	
58. MAGNETROL	TF52	WET	FLOAT ELEC	UNKNOWN	350 UP	UNKNOWN	<500	FLANGED	
59. MAGNETROL	TF201	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS	
60. MAGNETROL	A103F	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS	
61. MAGNETROL	291C	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS	
62. MAGNETROL	249C	WET	FLOAT ELEC	UNKNOWN	350 UP	UNKNOWN	<500	4IN DIFFERENTIAL VARIETY	
63. CONSOLIDAT	77G	WET	FLOAT ELEC	WHER	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS	
64. CONSOLIDAT	9G	WET	FLOAT ELEC	WATER	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS	
65. MASTERLEVE	FLOATMASTER	WET	FLOAT ELEC	WHER	UNKNOWN	UNKNOWN	125-249	UNKNOWN	
66. MASTERLEVE	LEVELMASTER	WET	FLOAT ELEC	WHER	UNKNOWN	UNKNOWN	75-124	UNKNOWN	
67. MASTERLEVE	PUMPMASTER	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	500-999	UNKNOWN	UNKNOWN	
68. JOBELL	A	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	
69. JOBELL	B	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	MAG SWITH HOR MOUNT VERT MOUNT
70. JOBELL	KY	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	TWO LEVEL
71. JOBELL	K	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	VERY MOUNT
72. JOBELL	R	WET	FLOAT ELEC	X-PRF	UNKNOWN	225-274	250-499	<500	EXTERNAL MOUNT
73. FISHER	241	WET	FLOAT ELEC	X-PRF	UNKNOWN	275-349	UNKNOWN	500-999	MAG SW INTERN AND EXTERN
74. HEALY RUFF	2500/260	WET	FLOAT ELEC	WHER	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOAT ON SS TAPE
75. HEALY RUFF	2700	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOAT ON SS TAPE
76. HEALY RUFF	2900	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MULTIPLE LEVEL
77. HEALY RUFF	3400	WET	FLOAT ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MAG FLOAT SWITCH

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9. ELECT ACTIVATION - US AND OR RF OPERATED

DESCRIPTION	USE	UP	ACTIVATION	ENVR	L TMP (F)	H TMP (F)	COST (\$)	MAX PRESS (PSI)	COMMENTS
1. TARRICONEF SLLD	WET	US, RF	ELEC	X-PRF	-61-80	225-274	UNKNOWN	2500-2999	
2. AMELECTROM SONARTROL	W6D	US, RF	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	EXPLOSIONPROOF AVAILABLE
3. VEZAINDOUST LIQUISWITC	WET	US, RF	ELEC	X-PRF	0 -20	165-179	125-249	500-999	
4. RAYTEONCOM SR50 SR100	W6D	US, RF	ELEC	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	
5. INVENTRON USONIC100	W6D	US, RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CONTINUOUS LEVEL MEASUREME
6. INVENTRON USONIC200	GAS	US, RF	ELEC	X-PRF	<-150	350 UP	UNKNOWN	4000 UP	
7. INTNATUL TR TU4ILL	WET	US, RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	INSTALLED AT TANK BOTTOM
8. PHOTOBELL	W6D	US, RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	INSTALLED ABOVE LIQUID
9. DELAVAN SONAC	W6D	US, RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
10. DELAVAN MODEL 4	WET	US, RF	ELEC	X-PRF	-41-60	225-274	UNKNOWN	3000-3999	
11. DELAVAN	DRY	US, RF	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	
12. DATASONICS 100	WET	US, RF	ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	
13. DATASONICS 500	W6D	US, RF	ELEC	X-PRF	0 -20	<150	1000-1499	UNKNOWN	
14. DATASONICS 800	W6D	US, RF	ELEC	X-PRF	0 -20	150-164	500-999	UNKNOWN	
15. DATASONICS 1000	WET	US, RF	ELEC	WTHR	0 -20	150-164	500-999	UNKNOWN	
16. AUTOMATION MD100	W6D	US, RF	ELEC	X-PRF	-21-40	<150	UNKNOWN	UNKNOWN	NO TANK PENETRATION
17. WESMAR SLM SERIES	W6D	US, RF	ELEC	X-PRF	-21-40	180-199	UNKNOWN	UNKNOWN	RF
18. NATIONALSO 123 133	DRY	US, RF	ELEC	X-PRF	-21-40	200-224	75-124	<500	MANY CONFIG 1FT TO 10FT
19. NATIONALSO 100	DRY	US, RF	ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	
20. NATIONALSO 501	WET	US, RF	ELEC	X-PRF	-21-40	225-274	75-124	500-999	SEVERAL TYPES
21. NATIONALSO 3935	WET	US, RF	ELEC	X-PRF	-21-40	275-349	UNKNOWN	500-999	HI OR LOW LIMITS
22. NATIONALSO 3105	WET	US, RF	ELEC		-101-150	225-274	125-249	<500	VISCOUS AND AERATED LIQUID
23. NATIONALSO 3605	WET	US, RF	ELEC		<-150	225-274	125-249	<500	AERATED LIQUIDS
24. NATIONALSO 300 400	WET	US, RF	ELEC	X-PRF	-21-40	150-164	125-249	2000-2499	CRYOGENIC
25. CHESTEVEN 3500	WET	US, RF	ELEC		-21-40	<150	500-999	UNKNOWN	
26. SENSORTech SP	W6D	US, RF	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	DEPTH MEASURE
27. SENSORTech ST	W6D	US, RF	ELEC		0 -20	150-164	UNKNOWN	UNKNOWN	DIRECT CONTACT
28. CONTROLTR 285	WET	US, RF	ELEC		-21-40	225-274	UNKNOWN	1500-1999	NO CONTACT
29. CONTROLTR 270	WET	US, RF	ELEC	X-PRF	-21-40	225-274	UNKNOWN	4000 UP	
30. BINCICATOR PRIMCO	W6D	US, RF	ELEC	X-PRF	-21-40	150-164	UNKNOWN	1000-1499	NO CONTACT
31. BINCICATOR LEVELDATA	W6D	US, RF	ELEC		0 -20	UNKNOWN	UNKNOWN	UNKNOWN	IGNORES COATED PROBE RF
32. BINCICATOR GAPPROBE	WET	US, RF	ELEC		-21-40	150-164	UNKNOWN	<500	LEVEL MEASURE
33. ENDRESSHAU 5204 5207	WET	US, RF	ELEC		-21-40	<150	UNKNOWN	UNKNOWN	
34. INVENTRON PC30	W6D	US, RF	ELEC		-41-60	200-224	UNKNOWN	<500	PC15 FOR LIQUIDS ONLY

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10. ELECT ACTIVATION - PRESSURE OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENV	TEMP (F)	TEMP (F)	COST (\$)	MAX PRESS (PSI)	COMMENTS
1. JEFFREY 496	DRY	PRESS	ELEC	DUSE	UNKNOWN	200-224	UNKNOWN	UNKNOWN	
2. FNC HLS	DRY	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BULK UPTO 100 LBS PERCU FT
3. MILTON ROY	ITF	PRESS	ELEC	0 -20	<150	UNKNOWN	UNKNOWN	UNKNOWN	
4. MERCID SERIES D	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
5. MERCID SERIES A	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	4000 UP	BJURON TUBE
6. MERCID SERIES C	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	DIAPHRAM
7. MONITOR SEVERAL	DRY	PRESS	ELEC	DUSE	UNKNOWN	UNKNOWN	UNKNOWN	<500	DUAL SWITCHES
8. WHITMANAN 9103	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
9. KENCO PUMP VTO	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
10. KENCO PUMP 107C	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
11. KENCO PUMP 117C	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
12. KENCO PUMP 102C	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
13. LIQ LEVELECT 6100	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
14. LIQ LEVELECT 6150	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
15. FOXBORO CO E170	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MULTI SWITCH
16. FOXBORO CO 13F	WET	PRESS	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	
17. FOXBORO CO E130MP	WET	PRESS	ELEC	UNKNOWN	350 UP	UNKNOWN	<500		LIQ LEV OR DENSITY
18. BINDERATOR BINDERATAT	DRY	PRESS	ELEC	X-PRF	0 -20	165-179	UNKNOWN	<500	
19. BINDERATOR LIQUIDLEVE	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
20. KLOCKNERMO MCSN	WET	PRESS	ELEC	UNKNOWN	150-164	UNKNOWN	UNKNOWN	UNKNOWN	MANY VARIATIONS
21. HONEYWELL 5292 7C	WET	PRESS	ELEC	X-PRF	UNKNOWN	150-164	<75	UNKNOWN	NIN CONTACT DIAPHRAM
22. YARWAY	WET	PRESS	ELEC	X-PRF	-21-60	200-224	UNKNOWN	UNKNOWN	PRES SW PROBE BY OTHERS
23. FISHER PDR 1302493KBA	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	3000-3999	CONTINUOUS LEVEL READ OUT
24. TRANS SONE P5202	WET	PRESS	ELEC	-21-60	225-274	UNKNOWN	<500		
25. CONSOLIDAY SOLID STAT	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES
26. TAYLOR 13007	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
27. TAYLOR 1320T	WET	PRESS	ELEC	X-PRF	-21-60	180-199	500-999	4000 UP	TANK AND REMOTE MOUNTED
28. TAYLOR 1310T	WET	PRESS	ELEC	X-PRF	-21-60	180-199	500-999	1500-1999	
29. TAYLOR 1360Y	WET	PRESS	ELEC	X-PRF	-21-60	180-199	500-999	500-999	
30. MASTERLEVE TANKMASTER	WET	PRESS	ELEC	X-PRF	-21-60	180-199	500-999	<500	
31. MASTERLEVE HYDROMASTE	WET	PRESS	ELEC	WATER	UNKNOWN	UNKNOWN	500-999	UNKNOWN	FDR ELEV WATER TANKS
32. METRITAPE	WET	PRESS	ELEC	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	UNKNOWN	FDR PRESSURE WATER TANKS
				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	RESISTANCE TAPE VARIOUSTYP

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1. ELECT ACTIVATION - CAPACITANCE OPERATED

DESCRIPTION	USE	UP	ACTIVATION	ENVIR	L	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
						TMP(F)	H TMP(F)			
1. COMPUTONE LC20EAD00	#60	CAP	ELEC	A-PRF	0	-20	150-164	UNKNOWN	UNKNOWN	
2. INSTURENTS 809	#60	CAP	ELEC	A-PRF	0	-20	150-164	500-999	500-999	
3. JACUBYTARD GUAGEGLASS	WET	CAP	ELEC	A-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4. FLOTRONICS L201	#60	CAP	ELEC	A-PRF	0	-20	<150	UNKNOWN	UNKNOWN	CLAMP ON GUAGE GLASS
5. ROBERTSHAW 304	#60	CAP	ELEC	A-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN	INTERFACE
6. ROBERTSHAW 310	#60	CAP	ELEC	A-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN	
7. ROBERTSHAW 314	#60	CAP	ELEC	A-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN	
8. CUSTOMCONT 10	#60	CAP	ELEC	A-PRF	0	-20	<150	UNKNOWN	UNKNOWN	TWO POINT
9. CUSTOMCONT 11	#60	CAP	ELEC	A-PRF	0	-20	<150	UNKNOWN	UNKNOWN	BATTERY OR 115VAC
10. CUSTOMCONT 11	#60	CAP	ELEC	A-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BATTERY OR 115VAC
11. CEIVALCO ELECTROLEY	#60	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
12. CEIVALCO ELECTROPRU	#60	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
13. AMIPRODUE #107	WET	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
14. CONTROLTRA 205	#60	CAP	ELEC	A-PRF	-61-80	225-274	UNKNOWN	UNKNOWN	UNKNOWN	
15. CONTROLTRA 210	#60	CAP	ELEC		-61-80	200-224	UNKNOWN	1500-1999	500-999	
16. SINCICATOR CAPLEVEL	#60	CAP	ELEC	A-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN	
17. ENDRESSHAU COMPATROL	#60	CAP	ELEC		0	-20	<150	UNKNOWN	UNKNOWN	FOR NON COATING LIQUIDS
18. ENDRESSHAU NOVITESTER	#60	CAP	ELEC		0	-20	<150	UNKNOWN	UNKNOWN	
19. ENDRESSHAU SELOMETER	#60	CAP	ELEC		0	-20	200-224	UNKNOWN	UNKNOWN	
20. ENDRESSHAU HTA200	#60	CAP	ELEC		0	-20	<150	UNKNOWN	UNKNOWN	
21. SIMMONDS P	WET	CAP	ELEC		UNKNOWN	350 UP	UNKNOWN	UNKNOWN	UNKNOWN	PT CONTROL USE WITH SILOME
										VOLUME MEASUREMENT

2. ELECT ACTIVATION - TEMP CHANGE OPERATED

DESCRIPTION	USE	UP	ACTIVATION	ENVIR	L	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
						TMP(F)	H TMP(F)			
1. FLUIDCUMPO 12-66	WET	TEMP	ELEC		-61-80	150-164	UNKNOWN	2500-2999	FLOW SWITCH	
2. SCULLY SCALTRUL	WET	TEMP	ELEC	A-PRF	-21-40	<150	1000-1499	UNKNOWN	6CHANNELS PETROCHEM	
3. ANDONIAN	CRY	TEMP	ELEC		UNKNOWN	UNKNOWN	250-499	UNKNOWN	CRYOGENIC LIQUID GASES	
4. FLUID CUMP	WET	TEMP	ELEC		-81-100	350 UP	UNKNOWN	3000-3999		
5. SIMMONDS P POINT LEVE	WET	TEMP	ELEC		-61-80	150-164	UNKNOWN	UNKNOWN	USED FOR FUEL LEVEL HI LO	

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13. ELECT ACTIVATION - PADDLE/PLATE OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.FLOTRONICS L400	DRY	PDLE	ELEC	X-PRF	-21-40	<150	UNKNOWN	UNKNOWN	
2.FMC 5XLC	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
3.MONITOR SEVERAL	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4.FULLER CO 5G5X	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN	ROTATING PADDLES
5.SENSORTECH CS	DRY	PDLE	ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	
6.BINDICATOR ROTOBINDIC	DRY	PDLE	ELEC	X-PRF	UNKNOWN	200-224	UNKNOWN	UNKNOWN	MANY VARIATIONS
7.ENDRESSHAU VIBRATROL	DRY	PDLE	ELEC	X-PRF	0 -20	<150	UNKNOWN	<500	

14. ELECT ACTIVATION - GAMMA RAY/LHT OPERATED

DESCRIPTION	USE	UP	ACTIVATION	ENVR	TEMP RANGE		L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1.KAYRAY INC SINGLEPOL	WET	E-RAD	ELEC	WHER	0 -20				UNKNOWN	4000 UP	LIMIT 30FT DIAM TANK
2.NUCLEARRES	WET	E-RAD	ELEC	X-PRF	-21-40	150-164			UNKNOWN	4000 UP	UPTO 80 FT DIAM
3.PHOTOBELL	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN			UNKNOWN	UNKNOWN	LIGHT TRANSMISSION
4.PHOTOBELL	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN			UNKNOWN	UNKNOWN	LIGHT REFLECTION SURFACE
5.CEIVALCO GAMMO	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN			UNKNOWN	UNKNOWN	ON-OFF LEVEL OR QUANTITY
6.OHMART	WET	E-RAD	ELEC		UNKNOWN	UNKNOWN			UNKNOWN	UNKNOWN	
7.AUTOTRON A700	DRY	E-RAD	ELEC		UNKNOWN	<150	75-124		UNKNOWN	UNKNOWN	

15. ELECT ACTIVATION - ELECT CONDUCTANCE OPER

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.LUMINITE FM SERIES	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOOD APPLICATIONS
2.LUMINITE EH SERIES	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
3.PHOTOBELL	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
4.ROBERTSHAW 352	WET	ELEC	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	CONDUCTIVE LIQUIDS
5.CEIVALCO LEVELTRON	WET	ELEC	ELEC	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
6.RANCO E24	WET	ELEC	ELEC		-21-40	<150	UNKNOWN	UNKNOWN	
7.AUTOTRON A744A	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	UP TO 100 MEGOHMS RESIST
8.ELECTROCOMP 1003	WET	ELEC	ELEC	WIHER	0 -20	<150	75-124	UNKNOWN	
9.CONTROLOTR 230	WET	ELEC	ELEC		-21-40	200-224	UNKNOWN	1500-1999	
10.MAKTRON 14 16 18	WET	ELEC	ELEC		0 -20	150-164	<75	UNKNOWN	CONDUCTIVE LIQ OR POWDER ECONOMICAL SOLID STATE
11.BINDICATOR PROBELEVEL	WET	ELEC	ELEC	WIHER	-21-40	150-164	UNKNOWN	2000-2499	
12.ENDRESSHAU 5304	WET	ELEC	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
13.BW CONTROL	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	75-124	UNKNOWN	VARIOUS CONFIGURATIONS NOT FOR ALL AQUEOUS SOLUTI BOILER CONTROL
14.WARRICK	WET	ELEC	ELEC		0 -20	<150	UNKNOWN	<500	
15.HYDROLEVEL SAFGARD	WET	ELEC	ELEC		UNKNOWN	UNKNOWN		<500	

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9. EL/PN ACTIVATION - FLOAT OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVR	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1. CEIVALCO	FLOAT	TYPE	WET	FLOAT EL/PN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SEVERAL CONFIGURATIONS
2. MASON IELAN 12000	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	2000-2499	TORQUE TUBE DISPLACER	
3. MUOREPRODU 27 AND 25	WET	FLOAT EL/PN	X-PRF	UNKNOWN	275-349	UNKNOWN	1000-1499		
4. LIQLEVLECT 265	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	4000 UP	HOR OR VERT MOUNT CONFIG	
5. LIQLEVLECT 101 102	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	4000 UP	INTERFACE OR PROPORTIONAL	
6. BALL MANUF SMC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	2500-2999	UPTO 1100 DEGREES	
7. BALL MANUF SHM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	1500-1999	SP GRAV PT2 TO IPTS	
8. BALL MANUF FVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN		
9. BALL MANUF FWL	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN		
10. BALL MANUF FVMD	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN		
11. BALL MANUF RVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	UNKNOWN		
12. BALL MANUF RHM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	UNKNOWN		
13. BALL MANUF SUM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	1500-1999		
14. BALL MANUF LWC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN		
15. BALL MANUF FVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN		
16. BALL MANUF FHM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN		
17. BALL MANUF SVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN		
18. BALL MANUF RVM	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN		
19. MAGNETROL TF	WET	FLOAT EL/PN	X-PRF	UNKNOWN	225-274	75-124	UNKNOWN		
20. MAGNETROL A	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500		
21. MAGNETROL 751	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	DISPLACERS	
22. MAJOR 681	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	500-999		
23. MAJOR 686	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	1000-1499		
24. VAREC OMNITROL	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	VARIOUS SWITCH METHODS	
25. BROOKS INS 5300	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	1000-1499		
26. MAGNETROL A1501	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	500-999	MEASUREMENT AND CONTROL	
27. MAGNETROL 751	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	4000 UP	VARIOUS SERIES	
28. JDBEL 4 CB	WET	FLOAT EL/PN	X-PRF	UNKNOWN	150-164	125-249	2000-2499	VARIOUS SERIES	
29. JDBEL 4 KC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	150-164	125-249	500-999	EXTERNAL MOUNT	

10. EL/PN ACTIVATION - PRESSURE OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVR	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1. CEIVALCO FC	WET	PRESS EL/PN		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
2. WESTINGHOUSE	WET	PRESS EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	1500-1999		
3. MAJOR 685	WET	PRESS EL/PN	X-PRF	UNKNOWN	200-224	UNKNOWN	UNKNOWN	LEVEL INDICATOR AND SWITCH	
4. BROOKS INS MD	DRY	PRESS EL/PN		UNKNOWN	180-199	UNKNOWN	<500		
5. BRISTOL 1650015	WET	PRESS EL/PN		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES BUBBLER TYPE	

11. EL/PN ACTIVATION - ELECT CONDUCTANCE OPER

DESCRIPTION	USE	OP	ACTIVATION	ENVR	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1. DEXELBROO 508	WET	ELEC EL/PN	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN		

EPA FAIL SAFE

17. PNEU ACTIVATION • FLOAT OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.LADISH 30C101-2	WET	FLOAT	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FJR CLOSED TANKS
2.LADISH 30C103-4	WET	FLOAT	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FJR OPEN TANKS
3.KIMRAY 12PLE	WET	FLOAT	PNEU	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	HIGH AND LOW ALARM
4.FOXBORO CO 178C	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	500-999	
5.FOXBORO CO 178S	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
6.FOXBORO CO 178T	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
7.HONEYWELL 7106	WET	FLOAT	PNEU		0 -20	350 UP	UNKNOWN	4000 UP	
8.FISHER 4170-249	WET	FLOAT	PNEU		-21-40	150-164	UNKNOWN	2000-2499	EXTERNAL MOUNT

18. PNEU ACTIVATION • PRESSURE OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.PAPERMACHI MIN AMTR	WET	PRESS	PNEU		UNKNOWN	100-199	75-124	<500	
2.FAIRCHILD LLC902S	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	PREVENT OVERFILL
3.FAIRCHILD LLC902HLA	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	HIGH AND LOW LEVEL CONTRL
4.FAIRCHILD LLC902SA	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LOW LEVEL CUT OFF
5.PETROMETER 1800	WET	PRESS	PNEU	WHER	UNKNOWN	UNKNOWN	75-124	UNKNOWN	PNEU TO ELECT CONTROLLER
6.MUOREPHODU 19M1	WET	PRESS	PNEU		-21-40	275-348	UNKNOWN	UNKNOWN	SUBMERISBLE
7.FOXBORO CO 13R	WET	PRESS	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
8.HERSEYPROD LEVELONETE	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BUBBLE TUBE
9.HONEYWELL 29503 & 5	WET	PRESS	PNEU	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	
10.FISHER PUR 1303493mA	WET	PRESS	PNEU		-21-40	225-274	UNKNOWN	<500	
11.TAYLOR 300T	WET	PRESS	PNEU	X-PRF	-21-40	100-199	500-999	<500	VARIOUS PRESSURE RANGES
12.TAYLOR 320T	WET	PRESS	PNEU	X-PRF	-21-40	100-199	500-999	1500-1999	DIFF PRESS
13.TAYLOR 310T	WET	PRESS	PNEU	X-PRF	-21-40	105-179	500-999	<500	
14.TAYLOR 300T	WET	PRESS	PNEU	X-PRF	0 -20	150-164	500-999	<500	
15.TAYLOR 200T	WET	PRESS	PNEU	X-PRF	0 -20	105-179	125-249	<500	
16.MASTERLEVE BUBBLENAST	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	500-999	UNKNOWN	BUBBLE TUBE
17.MASTERLEVE SUMPMASHE	WET	PRESS	PNEU	WHER	UNKNOWN	UNKNOWN	250-499	UNKNOWN	

19. HYDR ACTIVATION • PRESSURE OPERATED

DESCRIPTION	USE	OP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1.HONEYWELL 29222AND44	WET	PRESS	HYDR	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	

EPA FAIL SAFE

17. MECH ACTIVATION • FLOAT OPERATED

DESCRIPTION	USE	UP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1. WESMAR	LM SERIES	DRY	FLOAT MECH	DUST	-41-60	UNKNOWN	UNKNOWN	UNKNOWN	MANY CONFIG 2FT TO 100FT
2. BRISTOL	1KC500 15	WET	FLOAT MECH		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES
3. Fisher	220C 274	WET	FLOAT MECH		UNKNOWN	UNKNOWN	UNKNOWN	500-999	PNEU AND ELECT SWITCHES

1. MECH ACTIVATION • PRESSURE OPERATED

DESCRIPTION	USE	UP	ACTIVATION	ENVR	TEMP RANGE		COST(\$)	MAX PRESS(PSI)	COMMENTS
					L TMP(F)	H TMP(F)			
1. BRISTOL	108	WET	PRESS MECH		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS

EPA FAIL SAFE

WET USE ONLY

DESCRIPTION		USE	OP	ACTIVATION	ENVR	L TMP(F)	H TMP(F)	COST(\$)	MAX PRESS(PSI)	COMMENTS
1. FLUIDCOMP	12-64	WET	TEMP	ELEC		-61-80	150-164	UNKNOWN	2500-2999	FLOW SWITCH
2. PAPERMACHI	MIN XMTR	WET	PRESS	PNEU		UNKNOWN	180-199	75-124	<500	
3. SONICENGIN	SIGTGLASS	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SIGHT GLASS LEVEL SWITCH
4. TARRICONEF	SLLD	WET	US,RF	ELEC	X-PRF	-61-80	225-274	UNKNOWN	2500-2999	
5. VARECINC	2800	WET	FLOAT	ELEC		UNKNOWN	150-164	UNKNOWN	1500-1999	
6. VEZAINDUST	LIQUISWITC	WET	US,RF	ELEC	X-PRF	0 -20	165-179	125-249	500-999	
7. FAIRCHILD	LLC5025	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	PREVENT OVERFILL
8. FAIRCHILD	LLC502HLA	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	HIGH AND LOW LEVEL CONTROL
9. FAIRCHILD	LLC502SA	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LOW LEVEL CUT OFF
10. HARWIL	L20	WET	FLOAT	ELEC		UNKNOWN	165-179	UNKNOWN	<500	10 AMP SW FOR DIRECT CONTR
11. INTNATULTR	IU4ILL	WET	US,RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	INSTALLED ABOVE LIQUID
12. SLOANBROS		WET	FLOAT			UNKNOWN	UNKNOWN	<75	UNKNOWN	FILL VALVE AUTO SHUTOFF
13. JACOBYTARB	FULLVIEWLE	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT IN SIGHTGLASS
14. JACOBYTARB	GUAGEGLASS	WET	CAP	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CLAMP ON GUAGE GLASS
15. LUMINITE	FM SERIES	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOOD APPLICATIONS
16. LUMINITE	EH SERIES	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
17. LADISH	30C101-2	WET	FLOAT	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOR CLOSED TANKS
18. LADISH	30C103-4	WET	FLOAT	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOR OPEN TANKS
19. KIMRAY	12PLE	WET	FLOAT	PNEU	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	HIGH AND LOW ALARM
20. PHOTOBELL		WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LIGHT TRANSMISSION
21. PHOTOBELL		WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LIGHT REFLECTION SURFACE
22. PHOTOBELL		WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
23. MADISONLAB		WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	<75	<500	FLOAT SWICH
24. COMPAC		WET	FLOAT	ELEC	X-PRF	-41-60	225-274	75-124	500-999	MAGSWITCH SEVERAL STYLES
25. ROBERTSHAW	352	WET	ELEC	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	CONDUCTIVE LIQUIDS
26. FISHER	2800-252V	WET	FLOAT	ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	1000-1499	
27. CEIVALCO	LEVELTRONI	WET	ELEC	ELEC	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
28. CEIVALCO	FC	WET	PRESS	EL/PN		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
29. CEIVALCO	FLOAT TYPE	WET	FLOAT	EL/PN		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SEVERAL CONFIGURATIONS
30. SCULLY	SCULTROL	WET	TEMP	ELEC	X-PRF	-21-40	<150	1000-1499	UNKNOWN	6 CHANNELS PETRUCHEM
31. RANCO	E24	WET	ELEC	ELEC		-21-40	<150	UNKNOWN	UNKNOWN	
32. MERCROID	SERIES D	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	4000 UP	BJURDON TUBE
33. MERCROID	SERIES A	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	DIAPHRAM
34. MERCROID	SERIES C	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	DUAL SWITCHES
35. MERCROID	40 41 49	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
36. MERCROID	SERIES 101	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	RESSURIZED VESSELS
37. MERCROID	SERIES 201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	MAGSWITCH
38. MERCROID	211 221	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	
39. MERCROID	401	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
40. MERCROID	8190	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	DISPLACER DIRTY VISCOUNTURN
41. MERCROID	48204821	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	TORQUE TUBE
42. MCDONNELL	65	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
43. DELAVAL	MODEL 4	WET	US,RF	ELEC	X-PRF	-41-60	225-274	UNKNOWN	3000-3999	
44. DELAVAL	LS	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	75-124	<500	SINGLE STATION VARIOUS SIZES
45. DELAVAL	LS3	WET	FLOAT	ELEC		0 -20	180-199	75-124	UNKNOWN	LOW COST
46. DELAVAL	LS800	WET	FLOAT	ELEC		-61-80	150-164	125-249	UNKNOWN	MULTI STATION
47. DELAVAL	SWITCHKIT	WET	FLOAT	ELEC		UNKNOWN	275-349	75-124	500-999	
48. DELAVAL	LS2050	WET	FLOAT	ELEC	X-PRF	-21-40	275-349	75-124	500-999	SIDE MOUNT
49. PETROMETER	1800	WET	PRESS	PNEU	W/HER	UNKNOWN	UNKNOWN	75-124	UNKNOWN	PNEU TO ELECT CONTROLLER
50. MASONEILAN	12000	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	2000-2499	TORQUE TUBE DISPLACER
51. DATASONICS	100	WET	US,RF	ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	
52. DATASONICS	1000	WET	US,RF	ELEC	W/HER	0 -20	150-164	500-999	UNKNOWN	VJ TANK PENETRATION
53. AUTOTRON	A744A	WET	ELEC	ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	UP TO 100 MEGOHMS RESIST
54. CONTROLMEG	201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	200-224	75-124	<500	UP TO 2HP OUTPUT

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55. ELECTRIC	1003	WET	ELEC	ELEC	WHER	0 -20	<150	75-124	UNKNOWN	
56. NATIONAL SO	501	WET	US,RF	ELEC	X-PRF	-21-40	225-274	75-124	500-999	HI OR LOW LIMITS
57. NATIONAL SO	3935	WET	US,RF	ELEC	X-PRF	-21-40	275-349	UNKNOWN	500-999	VISCOUS AND AERATED LIQUID
58. NATIONAL SO	3105	WET	US,RF	ELEC		-101-150	225-274	125-249	<500	AERATED LIQUIDS
59. NATIONAL SO	3605	WET	US,RF	ELEC		<-150	225-274	125-249	2000-2499	CAYUGENIC
60. NATIONAL SO	300 400	WET	US,RF	ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	
61. CWSTEVENS	3500	WET	US,RF	ELEC		-21-40	<150	500-999	UNKNOWN	DEPTH MEASURE
62. AMIPRODUX	M107	WET	CAP	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
63. CONTROLOTR	230	WET	ELEC	ELEC		-21-40	200-224	UNKNOWN	1500-1999	CONDUCTIVE LIQ OR POWDER
64. CONTROLOTR	285	WET	US,RF	ELEC		-21-40	225-274	UNKNOWN	1500-1999	
65. CONTROLOTR	270	WET	US,RF	ELEC	X-PRF	-21-40	225-274	UNKNOWN	4000 UP	NO CONTACT
66. MOOREPRODU	271	WET	FLOAT	ELEC	X-PRF	UNKNOWN	225-274	125-249	500-999	
67. MOOREPRODU	19K1	WET	PRESS	PNEU		-21-40	275-349	UNKNOWN	UNKNOWN	SUBMERSIBLE
68. MOOREPRODU	27 AND 25	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	275-349	UNKNOWN	1000-1499	
69. WHITMAN	5103	WET	PRESS	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
70. QUALITROL	4360	WET	FLOAT	ELEC	X-PRF	-21-40	225-274	UNKNOWN	500-999	
71. QUALITROL	4720	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	
72. KENCO PUMP	VT0	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
73. KENCO PUMP	107C	WET	PRESS	ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
74. KENCO PUMP	117C	WET	PRESS	ELEC	WHER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
75. KENCO PUMP	102C	WET	PRESS	ELEC		UNKNOWN	150-164	UNKNOWN	UNKNOWN	
76. MARTON	14 16 18	WET	ELEC	ELEC		0 -20	150-164	<75	UNKNOWN	ECONOMICAL SOLID STATE
77. LIQLEVLECT	265	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	4000 UP	HJR OR VERT MOUNT CONFIG
78. LIQLEVLECT	L471	WET	FLOAT	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	HJR OR VERT MOUNT CONFIG
79. LIQLEVLECT	101 102	WET	FLOAT	EL/PN		UNKNOWN	350 UP	UNKNOWN	4000 UP	INTERFACE OR PROPORTIONAL
80. LIQLEVLECT	108	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
81. LIQLEVLECT	8200EX	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	HI AND LOW CONTROL
82. LIQLEVLECT	6100	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MULTI SWITCH
83. LIQLEVLECT	6150	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
84. FOXBORO CO	E170	WET	PRESS	ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	LIQ LEV OR DENSITY
85. FOXBORO CO	E178C	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	2500-2999	VERT DISPLACE EXTERNAL
86. FOXBORO CO	13F	WET	PRESS	ELEC		UNKNOWN	350 UP	UNKNOWN	<500	
87. FOXBORO CO	178C	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	500-999	
88. FOXBORO CO	178S	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
89. FOXBORO CO	178T	WET	FLOAT	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
90. FOXBORO CO	13R	WET	PRESS	PNEU	X-PRF	-21-40	225-274	UNKNOWN	<500	
91. FOXBORO CO	E178S	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500	
92. FOXBORO CO	E178T	WET	FLOAT	ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500	
93. FOXBORO CO	E13DMP	WET	PRESS	ELEC	X-PRF	0 -20	165-179	UNKNOWN	<500	
94. HERSEYPRUD	LEVELOMETE	WET	PRESS	PNEU	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BUBBLE TUBE
95. HERSEYPRUD	EA750A	WET	FLOAT	ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
96. BINDERATOR	LIQUIDLEVE	WET	PRESS	ELEC	X-PRF	UNKNOWN	150-164	UNKNOWN	UNKNOWN	NJN CONTACT DIAPHRAM
97. BINDERATOR	GAPPROBE	WET	US,RF	ELEC		-21-40	150-164	UNKNOWN	<500	
98. BINDERATOR	PROBELEVEL	WET	ELEC	ELEC	WHER	-21-40	150-164	UNKNOWN	2000-2499	
99. ENDRESSHAU	5304	WET	ELEC	ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
100. ENDRESSHAU	5284 5287	WET	US,RF	ELEC		-21-40	<150	UNKNOWN	UNKNOWN	
101. BALL MANUF	SWC	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	125-249	2500-2999	UPTJ1100DEGREES
102. BALL MANUF	SHM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	125-249	1500-1999	SP GRAV PT2 TO 1FT5
103. BALL MANUF	FVM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
104. BALL MANUF	FVL	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
105. BALL MANUF	FVMD	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
106. BALL MANUF	RVM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	UNKNOWN	
107. BALL MANUF	RHM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	UNKNOWN	
108. BALL MANUF	SUM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	125-249	1500-1999	
109. BALL MANUF	LWC	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN	
110. BALL MANUF	FVM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
111. BALL MANUF	FHM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	250-499	UNKNOWN	
112. BALL MANUF	SYM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	125-249	UNKNOWN	
113. BALL MANUF	RVM	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	225-274	75-124	UNKNOWN	
114. OIL RIGHT	LO LIQ	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500	OIL LOW LEVEL SWITCH
115. OIL RIGHT	HI LO LIQ	WET	FLOAT	ELEC		UNKNOWN	350 UP	UNKNOWN	<500	OIL HIGH AND LOW LEVEL SW
116. OW CONTROL		WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	75-124	UNKNOWN	VARIOUS CONFIGURATIONS
117. KLOCKNERMO	SW SB ST	WET	FLOAT	ELEC	WHER	0 -20	150-164	<75	UNKNOWN	FLOATS w FLOAT BY OTHERS
118. KLOCKNERMO	MC5N	WET	PRESS	ELEC		UNKNOWN	150-164	<75	UNKNOWN	PRES SW PROBE BY OTHERS
119. MAGNETROL	TF	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	
120. MAGNETROL	A	WET	FLOAT	EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	DISPLACERS

121. MAGNETROL	CAGE TYPE	WET	FLOAT ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	VARIOUS TEMP AND PRESSURES
122. MAGNETROL	751	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	500-999	
123. WESTINGHOUSE		WET	PRESS EL/PN	X-PRF	UNKNOWN	225-274	UNKNOWN	1500-1999	
124. GPE	92020	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT ON CABLE
125. GPE	92030	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT ON CABLE
126. MAJOR	683	WET	FLOAT ELEC	X-PRF	0 -20	225-274	UNKNOWN	UNKNOWN	LOW PRESSURE
127. MAJOR	681	WET	FLOAT EL/PN	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
128. MAJOR	686	WET	FLOAT EL/PN	X-PRF	-41-60	350 UP	UNKNOWN	<500	VARIOUS SWITCH METHODS
129. MAJOR	610	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MAGNETIC SWITCH
130. MAJOR	687	WET	FLOAT ELEC	X-PRF	-41-60	350 UP	UNKNOWN	1000-1499	HIGH PRESSURE
131. MAJOR	685	WET	PRESS EL/PN	X-PRF	-41-60	200-224	UNKNOWN	UNKNOWN	LEVEL INDICATOR AND SWITCH
132. HARRICK		WET	ELEC ELEC		0 -20	<150	UNKNOWN	<500	NOT FOR ALL AQUEOUS SOLUTIONS
133. FLUID COMP		WET	TEMP ELEC		-81-100	350 UP	UNKNOWN	3000-3999	
134. VAREC	OMNITROL	WET	FLOAT EL/PN	X-PRF	UNKNOWN	350 UP	UNKNOWN	1000-1499	
135. VAREC	2800	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
136. PENN CONTR	F11	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SUMP PUMP OR OPEN TANK
137. PENN CONTR	F59	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SUMP PUMP
138. PENN CONTR	F63	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOR CLOSED TANKS VAPORITISE
139. HONEYWELL	29222AND44	WET	PRESS HYDR	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	
140. HONEYWELL	5292 7C	WET	PRESS ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	
141. HONEYWELL	7106	WET	FLOAT PNEU		0 -20	350 UP	UNKNOWN	4000 UP	
142. HONEYWELL	29503 4 5	WET	PRESS PNEU	X-PRF	0 -20	<150	UNKNOWN	UNKNOWN	
143. BROOKS INS	5300	WET	FLOAT EL/PN		<150	350 UP	UNKNOWN	500-999	MEASUREMENT AND CONTROL
144. FARWAY		WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	3000-3999	CONTINUOUS LEVEL READ OUT
145. SQUARE D		WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN	SEVERAL TYPES
146. SIMMONDS P	POINT LEVE	WET	TEMP ELEC		-61-80	150-164	UNKNOWN	UNKNOWN	USED FOR FUEL LEVEL HI LO
147. SIMMONDS P		WET	CAP ELEC		UNKNOWN	350 UP	UNKNOWN	UNKNOWN	VOLUME MEASUREMENT
148. FISHER POR	1303493WAA	WET	PRESS PNEU		-21-40	225-274	UNKNOWN	<500	
149. FISHER POR	1302493KBA	WET	PRESS ELEC		-21-40	225-274	UNKNOWN	<500	
150. MAGNETROL	2498W	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BOILER CONTROL
151. MAGNETROL	402	WET	FLOAT ELEC		0 -20	350 UP	UNKNOWN	1500-1999	BOILER CONTROL
152. MAGNETROL	402X	WET	FLOAT ELEC		0 -20	350 UP	UNKNOWN	2000-2499	BOILER CONTROL
153. MAGNETROL	2518W	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	1500-1999	BOILER CONTROL
154. MAGNETROL	TF 63	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	NPT MOUNT
155. MAGNETROL	TF 52	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	FLANGED
156. MAGNETROL	TF 201	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
157. MAGNETROL	A103F	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
158. MAGNETROL	291C	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
159. MAGNETROL	249C	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	VARIOUS MODELS
160. MAGNETROL	751	WET	FLOAT EL/PN	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	2000-2499	MIN DIFFERENTIAL VARIETY
161. TRANS SUNI	P5202	WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS SERIES
162. BRISTOL	108	WET	PRESS MECH		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES
163. BRISTOL	1K500 15	WET	FLOAT MECH		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
164. BRISTOL	1G50015	WET	PRESS EL/PN		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES
165. CONSOLIDAT	776	WET	FLOAT ELEC	WATER	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES BUBBLER TYPE
166. CONSOLIDAT	SOLID STAT	WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
167. CONSOLIDAT	9G	WET	FLOAT ELEC	WATER	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
168. HYDROL ELEV	SAFGARD	WET	ELEC ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
169. TAYLOR	300T	WET	PRESS PNEU	X-PRF	-21-40	180-199	500-999	<500	BOILER CONTROL
170. TAYLOR	320T	WET	PRESS PNEU	X-PRF	-21-40	180-199	500-999	<500	VARIOUS PRESSURE RANGES
171. TAYLOR	310T	WET	PRESS PNEU	X-PRF	-21-40	165-179	500-999	<500	DIFF PRESS
172. TAYLOR	360T	WET	PRESS PNEU	X-PRF	0 -20	150-164	500-999	<500	
173. TAYLOR	200T	WET	PRESS PNEU	X-PRF	0 -20	165-179	125-249	<500	
174. TAYLOR	1300T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	<500	
175. TAYLOR	1320T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	4000 UP	TANK AND REMOTE MOUNTED
176. TAYLOR	1310T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	1500-1999	
177. TAYLOR	1360T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	500-999	
178. MASTERLEVE	TANKMASTER	WET	PRESS ELEC	WATER	UNKNOWN	UNKNOWN	500-999	<500	
179. MASTERLEVE	HYDROMASTER	WET	PRESS ELEC		UNKNOWN	UNKNOWN	1000-1499	UNKNOWN	FOR ELEV WATER TANKS
180. MASTERLEVE	BUBBLEMASTER	WET	PRESS PNEU	X-PRF	UNKNOWN	UNKNOWN	500-999	UNKNOWN	FOR PRESSURE WATER TANKS
181. MASTERLEVE	SUMPMASTER	WET	PRESS PNEU	WATER	UNKNOWN	UNKNOWN	250-499	UNKNOWN	BUBBLE TUBE
182. MASTERLEVE	FLUATMASTER	WET	FLOAT ELEC	WATER	UNKNOWN	UNKNOWN	125-249	UNKNOWN	
183. MASTERLEVE	LEVELMASTER	WET	FLOAT ELEC	WATER	UNKNOWN	UNKNOWN	75-124	UNKNOWN	
184. MASTERLEVE	PUMPMASTER	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	500-999	UNKNOWN	
185. JOBELE	A	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	MAG SWITCH FOR MOUNT
186. JOBELE	B	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	VERT MOUNT

187. JOBELL	CB	WET	FLOAT EL/PN	X-PRF	UNKNOWN	150-164	125-249	500-999	EXTERNAL MOUNT
188. JOBELL	KT	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	TWO LEVEL
189. JOBELL	K	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	VERT MOUNT
190. JOBELL	KC	WET	FLOAT EL/PN	X-PRF	UNKNOWN	150-164	125-249	<500	VERT MOUNT
191. JOBELL	R	WET	FLOAT ELEC	X-PRF	UNKNOWN	225-274	250-499	<500	EXTERNAL MOUNT
192. FISHER	4170-249	WET	FLOAT PNEU		-21-40	150-164	UNKNOWN	2000-2499	EXTERNAL MOUNT
193. FISHER	241	WET	FLOAT ELEC	X-PRF	UNKNOWN	275-349	UNKNOWN	500-999	MAG SW INTERN AND EXTERN
194. FISHER	220C 274	WET	FLOAT MECH		UNKNOWN	UNKNOWN	UNKNOWN	500-999	PNEU AND ELECT SWITCHES
195. HEALY RUFF	2500/260	WET	FLOAT ELEC	WTHR	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOAT ON SS TAPE
196. HEALY RUFF	2700	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOAT ON SS TAPE
197. HEALY RUFF	2900	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MULTIPLE LEVEL
198. HEALY RUFF	3400	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MAG FLOAT SWICH

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3. ELECTRIC ACTIVATION

DESCRIPTION	USE	OP	ACTIVATION	ENVR	L	TEMP (F)	H	TEMP (F)	COST (\$)	MAX PRESS (PSI)	COMMENTS
1. FLUIDCOMPO 12-64	WET	TEMP	ELEC			-61-80	150-164	UNKNOWN	2500-2999	FLOW SWITCH	
2. SONIC ENGIN SIGTGLASS	WET	FLOAT	ELEC			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SIGHT GLASS LEVEL SWITCH	
3. TARRICONEF SLD	WET	US, RF	ELEC	X-PRF		-61-80	225-274	UNKNOWN	2500-2999		
4. COMPU DYNE LC20EX000	W&D	CAP	ELEC	X-PRF	0	-20	150-164	UNKNOWN	UNKNOWN		
5. AMELECTROM SONARTROL	W&D	US, RF	ELEC	X-PRF	0	-20	150-164	UNKNOWN	UNKNOWN		
6. VAREC INC 2800	WET	FLOAT	ELEC			UNKNOWN	150-164	UNKNOWN	1500-1999	XPLOSIONPROOF AVAILABLE	
7. VEZAINOUST LIQUISWITC	WET	US, RF	ELEC	X-PRF	0	-20	165-179	125-249	500-999		
8. RAYTEONCOM SR50 SR100	W&D	US, RF	ELEC	X-PRF	0	-20	<150	UNKNOWN	UNKNOWN	CONTINUOUS LEVEL MEASUREME	
9. INVENTRON USONIC100	W&D	US, RF	ELEC	X-PRF		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
10. INVENTRON USONIC200	GAS	US, RF	ELEC	X-PRF	<-150	350 UP	UNKNOWN	UNKNOWN	4000 UP	INSTALLED AT TANK BOTTOM	
11. HARWIL L20	WET	FLOAT	ELEC			UNKNOWN	165-179	UNKNOWN	<500	10 AMP SW FOR DIRECT CONTR	
12. KAYRAY INC SINGLEPO1	W&D	E-RAD	ELEC	WHER	0	-20	UNKNOWN	UNKNOWN	4000 UP	LIMIT 30FT DIAM TANK	
13. INTNATULTR IU4ILL	WET	US, RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	INSTALLED ABOVE LIQUID	
14. INSTRUMENTS 809	W&D	CAP	ELEC	X-PRF	0	-20	150-164	500-999	500-999		
15. NUCLEARRES	W&D	E-RAD	ELEC	X-PRF	-21-40		150-164	UNKNOWN	4000 UP	UP TO 80 FT DIAM	
16. JACOBYTARB FULLVIEWLE	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT IN SIGHTGLASS	
17. JACOBYTARB GUAGEGLASS	WET	CAP	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CLAMP ON GUAGE GLASS	
18. LUMINITE FM SERIES	WET	ELEC	ELEC			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOOD APPLICATIONS	
19. LUMINITE EHSERIES	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
20. FLOTRONTCS L201	W&D	CAP	ELEC	X-PRF	0	-20	<150	UNKNOWN	UNKNOWN	INTERFACE	
21. FLOTRONTCS L400	DRY	PDLE	ELEC	X-PRF	-21-40		<150	UNKNOWN	UNKNOWN		
22. PHOTOBELL	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
23. PHOTOBELL	WET	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LIGHT TRANSMISSION	
24. PHOTOBELL	W&D	US, RF	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	LIGHT REFLECTION SURFACE	
25. PHOTOBELL	WET	ELEC	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
26. MADISONLAB	WET	FLOAT	ELEC			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
27. COMPAC	WET	FLOAT	ELEC	X-PRF	-41-60	225-274	75-124		<500	FLOAT SWICH	
28. ROBERTSHAW 304	W&D	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	500-999	MAGSWITCH SEVERAL STYLES	
29. ROBERTSHAW 310	W&D	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN		
30. ROBERTSHAW 314	W&D	CAP	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN		
31. ROBERTSHAW 352	WET	ELEC	ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	UNKNOWN	TWO POINT	
32. JEFFREY 496	DRY	PRESS	ELEC	DUST	UNKNOWN	200-224	UNKNOWN	UNKNOWN	UNKNOWN	CONDUCTIVE LIQUIDS	
33. CUSTOMCONT 10	W&D	CAP	ELEC	X-PRF	0	-20	<150	UNKNOWN	UNKNOWN	BULK UP TO 100LBS PERCU FT	
34. CUSTOMCONT 11	W&D	CAP	ELEC	X-PRF	0	-20	<150	UNKNOWN	UNKNOWN	BATTERY OR 115VAC	
35. CUSTOMCONT 11	W&D	CAP	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BATTERY OR 115VAC	
36. CUSTOMCONT TILT PROBE	DRY	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
37. FISHER 2800-252V	WET	FLOAT	ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	UNKNOWN	1000-1499	TILT PROBE	
38. FMC 5XLC	DRY	PDLE	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
39. FMC HLS	DRY	PRESS	ELEC			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
40. CEIVALCO GAMMO	W&D	E-RAD	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
41. CEIVALCO LEVELTRONI	WET	ELEC	ELEC	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ON-OFF LEVEL OR QUANTITY	
42. CEIVALCO ELECTROLEV	W&D	CAP	ELEC			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
43. CEIVALCO ELECTROPRO	W&D	CAP	ELEC			UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
44. SCULLY SCULTRON	WET	TEMP	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
45. MILTONROY	ITF	PRESS	ELEC			-21-40	<150	1000-1499	UNKNOWN	6 CHANNELS PETROCHEM	
46. RANCO E24	WET	ELEC	ELEC			0	-20	<150	UNKNOWN		
47. SKAN-A-MAT	W&D	ELEC	ELEC			-21-40	<150	UNKNOWN	UNKNOWN		
48. MERCOID	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	JPAQUE MATL CLEANENVIRU4E	
49. MERCOID SERIES D	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	4000 UP	BOURDON TUBE	
50. MERCOID SERIES A	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	<500	DIAPHRAM	
51. MERCOID SERIES C	WET	PRESS	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	<500	DUAL SWITCHES	
52. MERCOID 40 41 49	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN		
53. MERCOID SERIES 101	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	RESSURIZED VESSELS	
54. MERCOID SERIES 201	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499	MAGSWITCH	
55. MERCOID 211 221	WET	FLOAT	ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	1000-1499		

55. MERCROID	401	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
56. MERCROID	4190	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	DISPLACER DIRTY VISCOSITY
57. MERCROID	48204821	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	TORQUE TUBE
58. McDONNELL	65	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
59. MONITOR	CMB	WGD	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TJMOUNT LEVEL SOUNDER TAPE
60. MONITOR	SEVERAL	DRY	POLE ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ROTATING PADDLES
61. MONITOR	SEVERAL	DRY	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
62. MONITOR	SEVERAL	DRY	FLOAT ELEC	DUST	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
63. DELAVAN	SONAC	WGD	US, RF ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	TILT SUSPENDED IN BIN
64. DELAVAN	MODEL 4	WET	US, RF ELEC	X-PRF	-41-60	225-274	UNKNOWN	3000-3999	
65. DELAVAN		DRY	US, RF ELEC	X-PRF	-41-60	225-274	UNKNOWN	3000-3999	
66. DELAVAN	LS	WET	FLOAT ELEC	X-PRF	0 -20	150-164	UNKNOWN	UNKNOWN	
67. DELAVAN	LS3	WET	FLOAT ELEC	X-PRF	0 -20	180-199	75-124	<500	SINGLE STATION VARIOUS SIZES
68. DELAVAN	LS800	WET	FLOAT ELEC		-61-80	150-164	125-249	UNKNOWN	LO COST
69. DELAVAN	SWITCHKIT	WET	FLOAT ELEC		UNKNOWN	275-349	75-124	UNKNOWN	MULTI STATION
70. DELAVAN	LS2050	WET	FLOAT ELEC		UNKNOWN	275-349	75-124	500-999	
71. DATASONICS	100	WET	US, RF ELEC	X-PRF	-21-40	275-349	75-124	500-999	SIDE MOUNT
72. DATASONICS	500	WGD	US, RF ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	
73. DATASONICS	800	WGD	US, RF ELEC		0 -20	<150	1000-1499	UNKNOWN	
74. DATASONICS	1000	WGD	US, RF ELEC	X-PRF	0 -20	150-164	500-999	UNKNOWN	
75. ENRAFNONIU		WET	FLOAT ELEC	WITHER	0 -20	150-164	500-999	UNKNOWN	NO TANK PENETRATION
76. SPRAYCO		DRY	FLOAT ELEC	X-PRF	UNKNOWN	<150	UNKNOWN	UNKNOWN	TAPE WITH WEIGHT
77. OHMART		WGD	E-RAD ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	DEFLECTION OF PROBE
78. STEVENSADA	TELLEVAL	WGD	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
79. AUTOTRON	A744A	WET	ELEC ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	TILT CONICAL FLOAT
80. AUTOTRON	A700	DRY	E-RAD ELEC		UNKNOWN	UNKNOWN	75-124	UNKNOWN	UP TO 100 MEGOHMS RESIST
81. CONTROL 4FG	201	WET	FLOAT ELEC	X-PRF	UNKNOWN	<150	75-124	UNKNOWN	
82. ELECTROCORP	1003	WET	ELEC ELEC	WITHER	0 -20	200-224	75-124	<500	UP TO 2HP OUTPUT
83. ANDONIAN		CRY	TEMP ELEC		UNKNOWN	<150	75-124	UNKNOWN	
84. AUTOMATION	MLD100	WGD	US, RF ELEC	X-PRF	UNKNOWN	UNKNOWN	250-499	UNKNOWN	CRYOGENIC LIQUID GASES
85. FULLER CO	SGSX	DRY	POLE ELEC	X-PRF	-21-40	<150	UNKNOWN	UNKNOWN	RF
86. WESMAR	SLM SERIES	WGD	US, RF ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN	
87. NATIONAL SO	123 133	DRY	US, RF ELEC	X-PRF	-21-40	180-199	UNKNOWN	UNKNOWN	MANY CONFIG 1FT TO 10FT
88. NATIONAL SO	100	DRY	US, RF ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	
89. NATIONAL SO	501	WET	US, RF ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	SEVERAL TYPES
90. NATIONAL SO	3935	WET	US, RF ELEC	X-PRF	-21-40	225-274	75-124	500-999	HI OR LOW LIMITS
91. NATIONAL SO	3105	WET	US, RF ELEC	X-PRF	-21-40	275-349	UNKNOWN	500-999	VISCOUS AND AERATED LIQUID
92. NATIONAL SO	3605	WET	US, RF ELEC		-101-150	225-274	125-249	<500	AERATED LIQUIDS
93. NATIONAL SO	300 400	WET	US, RF ELEC	X-PRF	<-150	225-274	125-249	2000-2499	CRYOGENIC
94. CHESTEVENS	3500	WET	US, RF ELEC	X-PRF	-21-40	150-164	125-249	UNKNOWN	
95. SENSORTech	SP	WGD	US, RF ELEC	X-PRF	-21-40	<150	500-999	UNKNOWN	DEPTH MEASURE
96. SENSORTech	ST	WGD	US, RF ELEC		0 -20	150-164	UNKNOWN	UNKNOWN	DIRECT CONTACT
97. SENSORTech	CS	DRY	POLE ELEC		0 -20	150-164	UNKNOWN	UNKNOWN	NO CONTACT
98. AMIPRODUX	M107	WET	CAP ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
99. CONTROLTR	205	WGD	CAP ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
100. CONTROLTR	210	WGD	CAP ELEC		-61-80	225-274	UNKNOWN	1500-1999	
101. CONTROLTR	230	WET	ELEC ELEC		-61-80	200-224	UNKNOWN	500-999	
102. CONTROLTR	285	WET	US, RF ELEC		-21-40	200-224	UNKNOWN	1500-1999	CONDUCTIVE LIQ OR POWDER
103. CONTROLTR	270	WET	US, RF ELEC		-21-40	225-274	UNKNOWN	1500-1999	
104. MOOREPRODU	271	WET	US, RF ELEC	X-PRF	-21-40	225-274	UNKNOWN	4000 UP	NO CONTACT
105. WHITHAMMAN	5103	WET	FLOAT ELEC	X-PRF	UNKNOWN	225-274	125-249	500-999	
106. QUALITROL	4360	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
107. QUALITROL	4720	WET	FLOAT ELEC	X-PRF	-21-40	225-274	UNKNOWN	500-999	
108. KENCO PUMP	VTO	WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	
109. KENCO PUMP	107C	WET	PRESS ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
110. KENCO PUMP	117C	WET	PRESS ELEC	WATER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
111. KENCO PUMP	102C	WET	PRESS ELEC	WITHER	UNKNOWN	150-164	UNKNOWN	UNKNOWN	
112. MARTRON	14 16 18	WET	PRESS ELEC		UNKNOWN	150-164	UNKNOWN	UNKNOWN	
113. LIQLEVLECT	L471	WET	ELEC ELEC		0 -20	150-164	<75	UNKNOWN	ECNOMICAL SOLID STATE
114. LIQLEVLECT	108	WET	FLOAT ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	HOR OR VERT MOUNT CONFIG
115. LIQLEVLECT	8200EX	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	
116. LIQLEVLECT	6100	WET	PRESS ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	HI AND LOW CONTROL
117. LIQLEVLECT	6150	WET	PRESS ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MULTI SWITCH
118. FOXBORO CO	E17D	WET	PRESS ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	UNKNOWN	
119. FOXBORO CO	E17BC	WET	FLOAT ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	LIQ LEV OR DENSITY
120. FOXBORO CO	13F	WET	PRESS ELEC	X-PRF	0 -20	180-199	UNKNOWN	2500-2999	VERT DISPLACE EXTERNAL
					UNKNOWN	350 UP	UNKNOWN	<500	

21.	FOXBORO CO	E1785	WET	FLOAT ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500	
22.	FOXBORO CO	E178T	WET	FLOAT ELEC	X-PRF	0 -20	180-199	UNKNOWN	<500	
23.	FOXBORO CO	E130MP	WET	PRESS ELEC	X-PRF	0 -20	165-179	UNKNOWN	<500	
24.	HERSEYPROD	EA750A	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
25.	BINDICATOR	ROTOR INDIC	DRY	PDLE ELEC	X-PRF	UNKNOWN	200-224	UNKNOWN	UNKNOWN	MANY VARIATIONS
26.	BINDICATOR	BINDICATAT	DRY	PRESS ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MANY VARIATIONS
27.	BINDICATOR	LIQUIDLEVEL	WET	PRESS ELEC	X-PRF	UNKNOWN	150-164	UNKNOWN	UNKNOWN	NON CONTACT DIAPHRAM
28.	BINDICATOR	CAPLEVEL	WGD	CAP ELEC	X-PRF	-21-40	150-164	UNKNOWN	UNKNOWN	FOR NON COATING LIQUIDS
29.	BINDICATOR	PRIMCO	WGD	US,RF ELEC	X-PRF	-21-40	150-164	UNKNOWN	1000-1499	IGNORES COATED PROBE RF
30.	BINDICATOR	LEVELDATA	WGD	US,RF ELEC		0 -20	UNKNOWN	UNKNOWN	UNKNOWN	LEVEL MEASURE
31.	BINDICATOR	GAPPROBE	WET	US,RF ELEC		-21-40	150-164	UNKNOWN	<500	
32.	BINDICATOR	PROBELEVEL	WET	ELEC ELEC	WTHR	-21-40	150-164	UNKNOWN	2000-2499	
33.	ENDRESSHAU	VIBRATROL	DRY	PDLE ELEC	X-PRF	0 -20	<150	UNKNOWN	<500	
34.	ENDRESSHAU	SILOPILOT	DRY	FLOAT ELEC		0 -20	<150	UNKNOWN	UNKNOWN	WGT ON CABLE
35.	ENDRESSHAU	COMPATROL	WGD	CAP ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
36.	ENDRESSHAU	NOVITESTER	WGD	CAP ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
37.	ENDRESSHAU	SILOMETER	WGD	CAP ELEC		0 -20	200-224	UNKNOWN	UNKNOWN	
38.	ENDRESSHAU	HTA280	WGD	CAP ELEC		0 -20	<150	UNKNOWN	UNKNOWN	PT CONTROL USE WITH SILOME
39.	ENDRESSHAU	5304	WET	ELEC ELEC		0 -20	<150	UNKNOWN	UNKNOWN	
40.	ENDRESSHAU	5284 5287	WET	US,RF ELEC		-21-40	<150	UNKNOWN	UNKNOWN	
41.	OIL RIGHT	LO LIQ	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	OIL LOW LEVEL SWITCH
42.	OIL RIGHT	HI LO LIQ	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	OIL HIGH AND LOW LEVEL SW
43.	BW CONTROL		WET	ELEC ELEC	X-PRF	UNKNOWN	UNKNOWN	75-124	UNKNOWN	VARIOUS CONFIGURATIONS
44.	KLOCKNERMO	SW SB ST	WET	FLOAT ELEC	WTHR	0 -20	150-164	<75	UNKNOWN	FLOATSW FLOAT BY OTHER
45.	KLOCKNERMO	MCSN	WET	PRESS ELEC		UNKNOWN	150-164	<75	UNKNOWN	PRES SW PROBE BY OTHERS
46.	MAGNETROL	CAGE TYPE	WET	FLOAT ELEC	X-PRF	UNKNOWN	350 UP	UNKNOWN	<500	VARIOS TEMP AND PRESSURES
47.	GPE	92020	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT ON CABLE
48.	GPE	92030	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	FLOAT ON CABLE
49.	MAJOR	683	WET	FLOAT ELEC	X-PRF	0 -20	225-274	UNKNOWN	UNKNOWN	LOW PRESSURE
50.	MAJOR	610	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MAGNETIC SWITCH
51.	MAJOR	687	WET	FLOAT ELEC	X-PRF	-41-60	350 UP	UNKNOWN	1000-1499	HIGH PRESSURE
52.	WARRICK		WET	ELEC ELEC		0 -20	<150	UNKNOWN	<500	NOT FOR ALL AQUEOUS SOLUTI
53.	FLUID COMP		WET	TEMP ELEC		-81-100	350 UP	UNKNOWN	3000-3999	
54.	INVENTRON	PC30	WGD	US,RF ELEC		-41-60	200-224	UNKNOWN	<500	PC15 FOR LIQUIDS ONLY
55.	VAREC	2800	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
56.	PENN CONTR	F11	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SUMP PUMP OR OPEN TANK
57.	PENN CONTR	F59	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SUMP PUMP
58.	PENN CONTR	F63	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FOR CLOSED TANKS VAPORTITE
59.	HONEYWELL	5292 7C	WET	PRESS ELEC	X-PRF	-21-40	200-224	UNKNOWN	UNKNOWN	
60.	YARWAY		WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	3000-3999	CONTINUOUS LEVEL READ OUT
61.	SQUARE D		WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	UNKNOWN	SEVERAL TYPES
62.	SIMMONDS P	POINT LEVE	WET	TEMP ELEC		-61-80	150-164	UNKNOWN	UNKNOWN	USED FOR FUEL LEVEL HI LO
63.	SIMMONDS P		WET	CAP ELEC		UNKNOWN	350 UP	UNKNOWN	UNKNOWN	VOLUME MEASUREMENT
64.	FISHER POR	13D2493K8A	WET	PRESS ELEC		-21-40	225-274	UNKNOWN	<500	
65.	MAGNETROL	2498W	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	BOILER CONTROL
66.	MAGNETROL	402	WET	FLOAT ELEC		0 -20	350 UP	UNKNOWN	1500-1999	BOILER CONTROL
67.	MAGNETROL	402X	WET	FLOAT ELEC		0 -20	350 UP	UNKNOWN	2000-2499	BOILER CONTROL
68.	MAGNETROL	2518W	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	1500-1999	BOILER CONTROL
69.	MAGNETROL	TF63	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	NPT MOUNT
70.	MAGNETROL	TF52	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	FLANGED
71.	MAGNETROL	TF201	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
72.	MAGNETROL	A103F	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
73.	MAGNETROL	291C	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
74.	MAGNETROL	249C	WET	FLOAT ELEC		UNKNOWN	350 UP	UNKNOWN	<500	MIN DIFFERENTIAL VARIETY
75.	TRANS SONI	P5202	WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	SERIES
76.	CONSOLIDAT	77G	WET	FLOAT ELEC	WTHR	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
77.	CONSOLIDAT	SOLID STAT	WET	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
78.	CONSOLIDAT	96	WET	FLOAT ELEC	WATER	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	VARIOUS MODELS
79.	HYDROLEVEL	SAFGARD	WET	ELEC ELEC		UNKNOWN	UNKNOWN	UNKNOWN	<500	BOILER CONTROL
80.	TAYLOR	1300T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	4000 UP	TANK AND REMOTE MOUNTED
81.	TAYLOR	1320T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	1500-1999	
82.	TAYLOR	1310T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	500-999	
83.	TAYLOR	1360T	WET	PRESS ELEC	X-PRF	-21-40	180-199	500-999	<500	
84.	MASTERLEVE	TANKMASTER	WET	PRESS ELEC	WTHR	UNKNOWN	UNKNOWN	500-999	UNKNOWN	FOR ELEV WATER TANKS
85.	MASTERLEVE	HYDRUMASTE	WET	PRESS ELEC		UNKNOWN	UNKNOWN	1000-1499	UNKNOWN	FOR PRESSURE WATER TANKS
86.	MASTERLEVE	FLOATMASTE	WET	FLOAT ELEC	WTHR	UNKNOWN	UNKNOWN	125-249	UNKNOWN	

187.	MASTERLEVE	LEVELMASTER	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	75-124	UNKNOWN	
188.	MASTERLEVE	PUMPMASTER	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	500-999	UNKNOWN	
189.	JOBELL	A	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	MAG SWITH HOR MOUNT
190.	JOBELL	B	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	VERT MOUNT
191.	JOBELL	KT	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	<500	TWO LEVEL
192.	JOBELL	K	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	125-249	<500	VERT MOUNT
193.	JOBELL	R	WET	FLOAT ELEC	X-PRF	UNKNOWN	225-274	250-499	<500	EXTERNAL MOUNT
194.	METRITAPE		WGD	PRESS ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	RESISTANCE TAPE VARIOUSTYP
195.	FISHER	241	WET	FLOAT ELEC	X-PRF	UNKNOWN	275-349	UNKNOWN	500-999	MAG SW INTERN AND EXTERN
196.	HEALY RUFF	2500/260	WET	FLOAT ELEC	W/HER	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOAT ON SS TAPE
197.	HEALY RUFF	2700	WET	FLOAT ELEC	X-PRF	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	FLOAT ON SS TAPE
198.	HEALY RUFF	2900	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MULTIPLE LEVEL
199.	HEALY RUFF	3400	WET	FLOAT ELEC		UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	MAG FLOAT SWICH

APPENDIX B

INSTRUMENT AND VENDOR INFORMATION FOR CONTROLS EVALUATED

1. Inventron Ultrasonic Level Controller, Model # PC-15
Vendor: Inventron Industries, Inc.
6508 South Arizona Avenue
Los Angeles, CA 90045
2. Endress and Hauser Vibratol System, Model FTM 630
Vendor: Endress & Hauser, Inc.
2350 Endress Place
Greenwood, Indiana 46142
3. Brooks Magline™ Pneumatic Level Controller, Model 5320-GTG-D
Vendor: Brooks Instrument Division
Emerson Electric Co.
Hatfield, PA 19440